

RIVERSIDE TEXTBOOKS  
IN EDUCATION

EDITED BY ELLWOOD P. CUBBERLEY

DEAN OF THE SCHOOL OF EDUCATION  
LELAND STANFORD JUNIOR UNIVERSITY





# SECONDARY EDUCATION

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HOUGHTON MIFFLIN COMPANY

BOSTON • NEW YORK • CHICAGO • DALLAS • SAN FRANCISCO

*The Riverside Press Cambridge*

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**The Riverside Press**

CAMBRIDGE . MASSACHUSETTS

PRINTED IN THE U.S.A.

TO  
E. B. M.



## EDITOR'S INTRODUCTION

THERE is no part of the American public school system that has been subjected to such critical scrutiny, during the past quarter of a century, as has that part which we designate the secondary school. Especially during the past ten years has the questioning of existing secondary arrangements been particularly searching, and many new proposals for curriculum reorganization to meet the needs of new social objectives have been advanced by critical workers in this field of public education. In European lands, as well as in the United States, has the new ferment been at work, and to-day everywhere there is a challenging of old aims and purposes and objectives, and a marked tendency to reshape the school to make of it an instrument expressive of a larger democratic purpose. In particular has the center of gravity in instruction been shifted from subject-matter to the pupil, and especially to his needs as a member of society. So great has been this change in direction of the school that a textbook on secondary education that is ten years old can scarcely hope to represent the modern point of view.

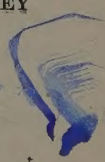
While important changes have taken place in European countries since the close of the World War with which the student of the secondary school in this country will do well to become acquainted, the greatest change of all has taken place in the United States. With us this division of our public school system is rapidly being made over in almost every way. Not only is the conception of the secondary school being expanded from that of a four-year to that of a six-year or an eight-year institution, but its curriculum is being revised and its objectives are being restated in terms



of new social needs which with us are each year becoming more and more in evidence. A new educational philosophy, too, is being developed which is redirecting the instruction as to aims and purposes, and causing teachers to see that their main duty, after all, is that of guiding and directing the normal processes of thought and action on the part of the pupils so as to extend their appreciations, widen the horizon of their ambitions, and prepare them better for efficient participation in the life of that modern society of which they must form a part. Teaching, in the light of such a stimulating philosophy of the educative process, is a vastly changed procedure from the old drill-master conception of instruction, and comes to be one of the greatest of the fine arts.

The author of the present volume in this series of textbooks has tried, very successfully it seems to the editor, to present a thoroughly modern textbook dealing with the present status of the secondary school; to point out the many ways in which the secondary school pupil has himself become a very important modifying factor; to set forth the importance for secondary education of the new guidance function; to establish criteria for the selection of subject-matter for the new secondary school; to explain at some length the most important modern objectives for its work; and to interpret for us the educational and social significance of the many extra-curricular activities which have so recently crowded in upon the school. As a textbook for college classes in the aims and objectives of secondary education it is believed that the present volume will readily find an important place for itself.

ELLWOOD P. CUBBERLEY



## PREFACE

DURING the last decade there have been so many contributions to educational theory, and so many interpretations of investigations dealing with a single aspect of the secondary school, that the teacher or principal has found it difficult to gain a perspective of the institution as a whole. This book has been written in the hope that it will aid its readers in understanding more clearly the purposes of the American secondary school, and in evaluating the ways and means by which those purposes are accomplished.

Those familiar with existing texts on secondary education will observe that the usual organization has for the most part been abandoned. Part I, dealing with the system of public education, owes its organization to the belief that the place of the secondary school is rightly conceived only when it is regarded as an integral part of the entire public school system, the relationships of whose various administrative units must be understood by those charged with the responsibility of teaching and administration if any single unit is to function properly. That education is growth and development, that growth and development are promoted by an environment whose elements have been selected and arranged in accordance with biological and psychological principles and laws, and that the technique of guidance shows the way of promoting mental and physical development, are the prevailing ideas in Part II. In Part III occurs, perhaps, the greatest deviation from the traditional treatment. The time has arrived, from the standpoint of educational theory, and it is to be hoped that it will soon arrive in practice, to consider the curriculum in terms of educa-

Part I

Part II

Part III

tional aims and objectives rather than in terms of English, foreign language, or mathematics. Moreover, either the teacher in service or the prospective teacher has more interest in, and more use for, a view of the purposes governing the activities of the various departments and divisions of the school than for detailed statements of the aims, method, and content of the various special subjects.

Any student of the field of secondary education naturally owes much to others. Such is the case in this instance. The reader will observe that the author has drawn freely upon current experimental literature, and that he has been influenced by the ideas of the men whose names appear upon the pages of this book. He is greatly indebted to Professor John M. Brewer, who read the chapters on educational and vocational guidance, and to Professors George S. Counts and Ellwood P. Cubberley, each of whom read the entire manuscript. His greatest obligation, however, is to the members of many classes in the principles of secondary education, in which the ideas contained in these pages were developed.

## ACKNOWLEDGMENTS

THE author is glad to make specific acknowledgment for permission to use quotations from the books listed below.

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# CONTENTS

## PART I. THE SYSTEM OF PUBLIC EDUCATION

### CHAPTER I. EARLY AMERICAN SECONDARY SCHOOLS . . . 3-30

Purpose of the chapter . . . . . 3

THE LATIN GRAMMAR SCHOOL . . . . . 4

The place of the Latin grammar school in Europe . . . . . 4

The Latin grammar school in America . . . . . 5

The curriculum . . . . . 5

Financial support . . . . . 7

The Law of 1647 . . . . . 8

Colonial elementary schools . . . . . 9

Student life in the Latin grammar school . . . . . 10

The influence of the Latin grammar school . . . . . 11

THE ACADEMY . . . . . 12

The rise of the academy . . . . . 12

The first academies . . . . . 14

The purposes of the academy . . . . . 16

The Phillips academies . . . . . 17

The curriculum . . . . . 17

The extent of the academy movement . . . . . 20

Student life . . . . . 20

Support and control . . . . . 21

Influence of the academy . . . . . 22

THE HIGH SCHOOL . . . . . 23

The first American high school . . . . . 23

Why the high school supplanted the academy . . . . . 25

Legal provisions . . . . . 26

The Kalamazoo case (1872) . . . . . 27

Growth of high schools . . . . . 28

### CHAPTER II. ELEMENTARY AND SECONDARY EDUCATION . 31-66

Purpose of the chapter . . . . . 31

THE ELEMENTARY SCHOOL . . . . . 32

The purpose of the elementary school . . . . . 32

Sixth-grade accomplishments . . . . .	33
In English . . . . .	33
In history and geography . . . . .	33
In liberal and practical arts . . . . .	34
In health . . . . .	34
Achievement measured by standard tests . . . . .	35
Reorganization of curriculum . . . . .	35
Articulation of elementary and secondary education . . . . .	35
<b>THE JUNIOR HIGH SCHOOL . . . . .</b>	<b>36</b>
The function of the junior high school . . . . .	36
Briggs's statement of functions . . . . .	37
Koos's analysis of functions . . . . .	38
An evaluation of functions . . . . .	39
The curriculum . . . . .	39
Individual differences . . . . .	42
Elimination . . . . .	43
Adolescence . . . . .	44
<b>THE SENIOR HIGH SCHOOL . . . . .</b>	<b>47</b>
Purpose of the senior high school . . . . .	47
Flexibility of organization needed . . . . .	47
Probable curricula . . . . .	48
The senior high school continues the functions of the junior high school . . . . .	49
Comprehensive <i>vs.</i> special-type high schools . . . . .	49
Part-time schools . . . . .	52
The continuation school . . . . .	53
The coöperative school . . . . .	53
Evening schools . . . . .	53
Federal aid . . . . .	54
All-day vocational schools . . . . .	54
<b>THE EXTENT OF SECONDARY EDUCATION . . . . .</b>	<b>55</b>
Number and size of high schools . . . . .	55
Number of secondary-school pupils . . . . .	56
Growth of high schools . . . . .	56
Reasons for growth . . . . .	57
Compulsory school attendance . . . . .	57
Children not in school . . . . .	58
Needed legislation . . . . .	58
The amount of education received by the average citizen . . . . .	59
Change in character of secondary population . . . . .	61
Uniformity in high-school organization . . . . .	62
Future growth . . . . .	63

# CONTENTS

xv

<b>CHAPTER III. COLLEGIATE AND UNIVERSITY EDUCATION</b>	<b>67-85</b>
Introduction . . . . .	67
<b>THE JUNIOR COLLEGE</b> . . . . .	68
Definition of junior college, and extent of movement . . . . .	68
The function of the junior college . . . . .	69
Forces retarding or stimulating junior-college development . . . . .	70
Small private colleges benefited . . . . .	71
Crowded conditions in collegiate institutions . . . . .	71
<b>THE UNIVERSITY</b> . . . . .	72
The purpose of the university . . . . .	72
Factors contributing to the above conception of a university . . . . .	73
Nature of first two years of collegiate work . . . . .	73
The advancing age of college freshmen . . . . .	74
Adoption of the elective system . . . . .	75
Junior divisions in universities . . . . .	75
Reorganization at Johns Hopkins University . . . . .	75
The liberal arts college . . . . .	76
Normal schools and teachers' colleges . . . . .	77
The city university . . . . .	78
<b>COLLEGE ATTENDANCE</b> . . . . .	80
Growth of colleges and universities . . . . .	80
Number of high-school students attending college . . . . .	83
 <b>CHAPTER IV. COLLEGE ENTRANCE REQUIREMENTS</b> . . . . .	 <b>86-109</b>
The necessity of selecting college students . . . . .	86
Origin of present entrance requirements . . . . .	86
The accrediting system . . . . .	87
Required secondary-school preparation . . . . .	88
Recommendations of the National Education Association Committee . . . . .	88
College requirements in 1912 . . . . .	89
Changes in admission requirements . . . . .	90
The College Entrance Examination Board . . . . .	92
The examination plan in practice . . . . .	93
Do principals favor the examination system? . . . . .	94
The accrediting system . . . . .	95
The accrediting system in practice . . . . .	96
High-school marks and college scholarship . . . . .	97
Relative scholarship as a supplement to accrediting . . . . .	99
The use of intelligence tests . . . . .	100
The plan of the American Council on Education . . . . .	102

What should be the requirements for college entrance? . . .	103
Units required for college entrance should be earned in senior high school . . . . .	105
College scholarship and later career . . . . .	105

## CHAPTER V. SECONDARY SCHOOLS OF ENGLAND, FRANCE AND GERMANY . . . . . 110-132

Introduction . . . . .	110
A division in European schools . . . . .	111
Secondary schools in France . . . . .	111
Schools for boys . . . . .	112
Schools for girls . . . . .	112
Advanced primary schools . . . . .	113
The return to the classics . . . . .	113
The English "public" schools . . . . .	115
Other secondary schools . . . . .	116
The Fisher Act . . . . .	118
Difficulties of enforcement . . . . .	119
Advance in education under the Fisher Act . . . . .	120
The secondary schools of Germany . . . . .	121
Intermediate schools . . . . .	123
The popular high school . . . . .	123
Educational changes in Germany . . . . .	124
The movement to break the distinction between the schools for the masses and the schools for the classes . . . . .	125
In Germany . . . . .	125
In England . . . . .	126
In France . . . . .	127
Percentages served by secondary schools . . . . .	127
Time covered by secondary education . . . . .	128
Thoroughness in scholarship . . . . .	128
Training of teachers . . . . .	129

## CHAPTER VI. PROBLEMS IN THE REORGANIZATION OF SECONDARY EDUCATION . . . . . 133-161

Origin of the eight-four plan . . . . .	133
Influences in reorganization . . . . .	134
The Committee of Ten . . . . .	134
The economy of time movement . . . . .	134
Present movement toward reorganization . . . . .	136
The rise of the junior high school . . . . .	137
Extent of the movement . . . . .	138
Reorganization of secondary education not complete . . . . .	139
First steps in reorganization . . . . .	140
Obstacles to progress . . . . .	141

# CONTENTS

xvii

Articulation of the various units of the school system . . .	142
The elementary and the junior high school . . .	143
Articulation of junior and senior high school . . .	144
Admission requirements . . . . .	145
To the junior high school . . . . .	145
To the senior high school . . . . .	146
Grade organization . . . . .	146
The six-three-three plan . . . . .	147
The six-four-four plan . . . . .	148
The problem of the small high school . . . . .	149
The four-year junior high school . . . . .	151
The six-year secondary school . . . . .	151
Can the period of education be shortened? . . . . .	152
The Kansas City experiment . . . . .	152
The eleven-grade schools of the South . . . . .	153
Reorganization and the financial problem . . . . .	154
Sources of funds for secondary schools . . . . .	154
Proportions of municipal funds devoted to schools . . . . .	156
The high cost of secondary education . . . . .	156
Can the Nation finance its educational program? . . . . .	158
Disagreement regarding the Nation's ability to pay . . . . .	159
A different system of taxation suggested . . . . .	159

## PART II. THE SECONDARY-SCHOOL PUPIL

CHAPTER VII. MENTAL AND PHYSICAL CHARACTERISTICS OF ADOLESCENCE . . . . .	165-193
A preview of Part II . . . . .	165
The biological point of view . . . . .	167
Sources of knowledge of youth . . . . .	167
Adult remembrances . . . . .	168
Popular literature . . . . .	168
Scientific literature . . . . .	168
Direct observation and study . . . . .	170
Time of onset of adolescence . . . . .	171
Factors influencing onset of puberty . . . . .	171
Criteria for judging post-pubescence . . . . .	172
Physical growth . . . . .	174
Growth of bones and muscles . . . . .	175
The circulatory and respiratory systems . . . . .	175
The brain . . . . .	176
Variability in measurements . . . . .	176
Mental growth . . . . .	177
Memory and reasoning . . . . .	178



Development of the more specific mental traits . . . . .	179
Growth of general intelligence . . . . .	180
Relation between mental and physical growth . . . . .	181
Instinctive development . . . . .	185
The sex instinct . . . . .	185
Social tendencies . . . . .	188
Gregariousness . . . . .	188
Migratory tendencies and love of adventure . . . . .	189
The emotions . . . . .	189
Change in emotion and change in instinct . . . . .	189
Physiological basis for adolescent emotional changes . . . . .	190
Strong emotion characteristic of adolescence . . . . .	190
Youthful interests . . . . .	191

## CHAPTER VIII. INDIVIDUAL DIFFERENCES AMONG SECOND-ARY-SCHOOL PUPILS . . . . . 194-224

Important contributions from the psychology of individual differences . . . . .	194
Differences in school accomplishment . . . . .	194
Overlapping of abilities . . . . .	196
Distribution of individual differences . . . . .	198
With what traits is secondary education most concerned? . . . . .	200
Differences in general intelligence . . . . .	200
Terminology . . . . .	200
The nature of general intelligence . . . . .	201
General intelligence as a single capacity . . . . .	202
General intelligence as a group of related capacities . . . . .	203
Relationship among mental capacities . . . . .	204
Elements in intelligent behavior . . . . .	205
The distribution of intelligence . . . . .	206
Factors conditioning general intelligence . . . . .	207
Sex . . . . .	207
Social-economic status . . . . .	209
Race . . . . .	210
Physical traits . . . . .	213
Social intelligence . . . . .	214
Differences in vocational interests . . . . .	215
Sex differences . . . . .	217
Differences due to environment . . . . .	218
Differences due to racial and family social inheritance . . . . .	218
Differences in moral qualities . . . . .	220
Sex differences . . . . .	221
Relation between character and intelligence . . . . .	221

# CONTENTS

xix

## CHAPTER IX. ELIMINATION FROM SCHOOL . . . . . 225-253

How long do pupils remain in school? . . . . .	225
The greatest proportionate loss occurs between grades eight and nine . . . . .	226
Rate of elimination in secondary schools . . . . .	227
Elimination dependent upon local conditions . . . . .	227
Retardation, normal progress, and acceleration . . . . .	228
Ill health as a cause of elimination . . . . .	230
Sex as a determiner of length of stay in high school . . . . .	232
Race, nationality, and school attendance . . . . .	233
Social and economic status and elimination . . . . .	234
The high-school situation . . . . .	235
The situation in rural high schools . . . . .	238
Home conditions . . . . .	240
Education of parents . . . . .	240
The home library . . . . .	240
Failure in high school and elimination . . . . .	241
Intent to remain in school . . . . .	243
Elimination conditioned by vocational choice . . . . .	245
Lack of intelligence and elimination . . . . .	245
Lack of intelligence <i>vs.</i> other causes of elimination . . . . .	247
Retardation . . . . .	247
Race and nationality . . . . .	248
Sex . . . . .	248
Social and economic conditions . . . . .	248
Lack of interest in school work . . . . .	249
The junior high school as a remedy for elimination . . . . .	250
Conclusion . . . . .	250

## CHAPTER X. EDUCATIONAL AND VOCATIONAL GUIDANCE 254-286

The meaning of guidance . . . . .	254
GUIDANCE THROUGH SCHOOL STUDIES . . . . .	256
Personal counseling . . . . .	256
The secondary school a "finding place" . . . . .	257
General courses . . . . .	258
General science . . . . .	259
Composite mathematics . . . . .	260
Social science . . . . .	260
General foreign language . . . . .	261
Try-out courses . . . . .	262
Life-career classes . . . . .	264
The Grand Rapids plan . . . . .	266

## CONTENTS

GUIDANCE THROUGH EXTRA-CLASS AGENCIES . . . . .	267
Speakers from without the school . . . . .	267
Trips to industrial establishments . . . . .	267
Work during out-of-school hours and vacations . . . . .	267
Go-to-high-school campaigns . . . . .	268
THE VOCATIONAL DECISION . . . . .	269
Choice of vocation . . . . .	269
Factors affecting vocational decision . . . . .	271
Parents' vocation and occupational choice . . . . .	271
Social approval and preferred vocations . . . . .	272
Intelligence and choice of vocation . . . . .	274
Needed investigation . . . . .	276
Change of mind regarding future occupation . . . . .	276
Restatements of choice . . . . .	277
Choices of junior-high-school pupils <i>vs.</i> choices of senior-high-school pupils . . . . .	278
Individuals' own statements of vocational decision . . . . .	279
Intelligence and change of plan . . . . .	280
Occupational destination of pupils leaving before the end of the secondary school . . . . .	280
Placement and follow-up . . . . .	282
Vocational destinations of high-school graduates . . . . .	283
CHAPTER XI. EDUCATIONAL AND VOCATIONAL GUIDANCE ( <i>continued</i> ) . . . . .	287-322
TESTS AS AN AID IN GUIDANCE . . . . .	287
Intelligence and quality of scholarship . . . . .	287
Correspondence between intelligence level and Scholarship . . . . .	287
Minimum intelligence necessary for successful school work . . . . .	288
Relation between intelligence level and success in various subjects . . . . .	289
Intelligence ratings and choice of subjects . . . . .	291
Educational guidance based upon intelligence . . . . .	292
Vocational guidance based upon intelligence . . . . .	293
Diagnosis of ability through special tests . . . . .	294
Musical ability . . . . .	295
Mechanical aptitude . . . . .	295
Standardized educational tests as a means of predicting academic success . . . . .	296
Limitation of mental tests in educational and vocational guidance . . . . .	296
Their reliability . . . . .	297
Factors conditioning their validity . . . . .	298
Traits not measured . . . . .	300

# CONTENTS

xxi

ADAPTING INSTRUCTION TO INDIVIDUAL DIFFERENCES . . . . .	301
School work for pupils of varying abilities . . . . .	301
Bright pupils . . . . .	302
Dull pupils . . . . .	302
Special classes for very bright pupils . . . . .	303
Homogeneous grouping of pupils . . . . .	304
Methods of classification . . . . .	305
Intelligence tests an aid in classification . . . . .	305
Does homogeneous grouping meet the problem of individualizing instruction? . . . . .	306
Experiments in adjusting instruction to individual differences . . . . .	307
Class organization retained . . . . .	307
Class organization abandoned . . . . .	308
Results . . . . .	309
GUIDANCE WITH REFERENCE TO COLLEGE ENTRANCE . . . . .	310
The need of guidance . . . . .	310
How a college education is regarded . . . . .	311
Expectation of entering college and actual matriculation . . . . .	311
Intelligence and intent to enter college . . . . .	312
Bad college risks . . . . .	313
What shall be the procedure in guidance? . . . . .	313
Guidance in collegiate institutions . . . . .	314
CONCLUSION . . . . .	314
Guidance plans in common use . . . . .	314
A point of view toward guidance . . . . .	315
Problems to be considered . . . . .	317

## PART III. THE CURRICULUM

CHAPTER XII. THE AIMS AND OBJECTIVES OF SECONDARY EDUCATION . . . . .	325-344
Introduction . . . . .	325
General educational aims . . . . .	326
Spencer's analysis of aims . . . . .	327
Those activities which directly minister to self-preservation . . . . .	327
Those activities which, by securing the necessities of life, indirectly minister to self-preservation . . . . .	328
Those activities which have for their end the rearing and discipline of offspring . . . . .	328
Those activities which are involved in the maintenance of proper social and political relations . . . . .	329
Those miscellaneous activities which make up the leisure part of life . . . . .	329

Aims of the Commission on the Reorganization of Secondary Education . . . . .	330
Health . . . . .	330
Command of fundamental processes . . . . .	331
Worthy home-membership . . . . .	331
Vocation . . . . .	331
Civic education . . . . .	332
Worthy use of leisure . . . . .	333
Ethical character . . . . .	333
Comparison of the two sets of aims . . . . .	334
Bobbitt's analyses of objectives . . . . .	335
Significance of the foregoing analyses of aims . . . . .	336
Subjects represent a logical classification . . . . .	336
Aims have been stated in terms of subjects . . . . .	337
The project method . . . . .	338
Curriculum-building emphasizes projects . . . . .	338
Less stress to be placed upon subjects . . . . .	339
The importance of ideals and attitudes . . . . .	339
Ideals and attitudes described . . . . .	340
Attitudes an inevitable result of instruction . . . . .	341
The law of forgetting . . . . .	342
 CHAPTER XIII. THE SELECTION AND VALIDATION OF CURRICULUM MATERIALS . . . . .	 345-372
What is the curriculum? . . . . .	345
 THE THEORY OF TRANSFER OF TRAINING AND ITS EFFECT UPON THE CURRICULUM . . . . .	 346
The old view of transfer of training . . . . .	346
Formal discipline and the Committee of Ten . . . . .	347
Influence of the doctrine of formal discipline upon the "practical" subjects . . . . .	348
The new theory of transfer of training . . . . .	348
The avenues of transfer . . . . .	349
Identical elements of substance . . . . .	350
Identical elements of procedure . . . . .	350
Identical elements of aim or ideal . . . . .	351
Transfer through the process of generalization . . . . .	352
Factors influencing the amount of transfer . . . . .	353
Similarity of situations . . . . .	353
Transfer may be delayed . . . . .	353
Negative transfer . . . . .	353
Individual differences . . . . .	354
The teacher an important factor . . . . .	354



# CONTENTS

xxiii

What subjects offer greatest transfer values? . . . . .	354
Pure <i>vs.</i> applied science . . . . .	355
The Classical Investigation . . . . .	356
Thorndike's experiment . . . . .	356
Theory of transfer not invalidated by recent investigations . . . . .	357
Effect of the new theory of transfer upon the curriculum . . . . .	358
Effect of the new theory of transfer upon methods of teaching . . . . .	359
Clear-cut aims essential . . . . .	359
Pupils to understand purpose of work they do . . . . .	360
EDUCATIONAL AIMS AND THE SELECTION OF SUBJECT-MATTER . . . . .	361
The function of general aims . . . . .	361
A detailed analysis of aims necessary . . . . .	362
A hierarchy of objectives . . . . .	363
A preliminary analysis of objectives . . . . .	363
METHODS OF SELECTING AND VALIDATING SUBJECT-MATTER . . . . .	365
Old methods are being refined and new techniques developed . . . . .	365
The method of collective opinion . . . . .	366
The survey method . . . . .	367
Job analysis . . . . .	368
An evaluation of the methods of determining curriculum content . . . . .	369
Continuous revision necessary . . . . .	370
CHAPTER XIV. THE FUNDAMENTAL PROCESSES . . . . .	373
Introduction . . . . .	373
THE TOOLS OF LEARNING . . . . .	374
Ability to read silently . . . . .	374
Vocabulary . . . . .	376
Use of library, and expanded library facilities . . . . .	377
ORAL, WRITTEN, AND GRAPHIC EXPRESSION . . . . .	378
Aims in oral and written expression . . . . .	378
Motivation necessary in expression . . . . .	379
The mechanics of English . . . . .	380
Errors common to oral and written speech . . . . .	381
Proposed separation of literature and composition . . . . .	383
Foreign language and improvement in English . . . . .	383
Vocabulary . . . . .	384
Composition . . . . .	384
Spelling . . . . .	385
Significance of teaching aims and methods . . . . .	385
Drawing as a means of expression . . . . .	386
Lapse of interest in spontaneous drawing . . . . .	386

Secondary-school work in drawing should be extended . . . . .	387
Diagrammatic representation . . . . .	387
THE FUNDAMENTALS OF COMPUTATION . . . . .	388
Selection and arrangement of topics in mathematics . . . . .	388
Changes in arithmetic recommended by school administrators	388
Mathematical processes used in the average home . . . . .	390
Mathematics used in later courses and in general reading	390
Arithmetical processes emphasized in textbooks . . . . .	391
Aims in mathematics . . . . .	392
Direct values . . . . .	393
Indirect values . . . . .	393
Organization of courses . . . . .	394
In the junior high school . . . . .	395
In the senior high school . . . . .	395
BASIC SCIENCE . . . . .	396
Purposes of science instruction . . . . .	396
Scientific interests of children and adults . . . . .	397
Scientific principles in common use . . . . .	399
Current biology . . . . .	400
The organization of courses . . . . .	402
Values of the laboratory method . . . . .	404
METHODS AND INSTRUMENTS OF THOUGHT . . . . .	405
Reflective thinking . . . . .	405
Concepts derived from various school subjects . . . . .	406
The relation of language to thought . . . . .	407
School activities which give training in the use of words	407
CHAPTER XV. EDUCATION FOR CITIZENSHIP . . . . .	411-444
Purpose of education for citizenship . . . . .	411
Social organization . . . . .	411
Social integration . . . . .	412
The problem of social integration illustrated . . . . .	414
Necessity of clear thinking on civic matters . . . . .	416
Emergence of new problems illustrated in growth of cities	416
How the problem is to be met . . . . .	418
Present status of instruction in social sciences . . . . .	419
"Modern" social studies . . . . .	420
Social studies in high schools of the North Central Association	420
Recent and probable future changes . . . . .	422
Criticism of social science courses . . . . .	422
History and geography too encyclopædic . . . . .	423
Material should be organized around a few important topics	423

# CONTENTS

xxv

Current industrial, social, and political problems inadequately treated . . . . .	424
Doubtful value of instruction in cultivating attitudes . . . . .	426
Objective investigations to determine content in social sciences . . . . .	427
Analysis of textbooks . . . . .	427
The newspaper-magazine method . . . . .	430
Analysis of political platforms . . . . .	431
Courses in the social sciences . . . . .	433
The plan of the Committee of the Commission on the Reorganization of Secondary Education . . . . .	434
Program for social sciences in Connecticut secondary schools . . . . .	435
The proposal of the Commission of the Association of Collegiate Schools of Business . . . . .	436
Social values of literature and foreign language . . . . .	438
Method and the citizenship aim . . . . .	438
Citizenship training through extra-curricular activities . . . . .	439
Principles of organization illustrated . . . . .	440
<b>CHAPTER XVI. EDUCATION FOR HOME MEMBERSHIP . . . . .</b>	<b>445-470</b>
Industrial changes affecting family life . . . . .	445
Factors affecting family solidarity . . . . .	446
The problem of the school . . . . .	447
Education for consumption . . . . .	447
Food . . . . .	448
Clothing . . . . .	448
Shelter . . . . .	449
Factors common to the education of both sexes . . . . .	450
Social intermingling of the sexes . . . . .	454
Social dancing . . . . .	455
Other forms of social entertainment . . . . .	455
Courses for girls . . . . .	456
Required <i>vs.</i> elective home economics courses . . . . .	457
Content and arrangement of home economics courses . . . . .	459
For over-age girls . . . . .	459
For girls who expect to continue their education . . . . .	461
Girls' organizations and training in home arts . . . . .	462
Courses for boys . . . . .	463
Applied science . . . . .	463
"Valet" clubs . . . . .	466
Home repair . . . . .	466
Parent-teacher associations . . . . .	467
<b>CHAPTER XVII. MORAL TRAINING . . . . .</b>	<b>471-497</b>
Morality as an educational aim . . . . .	471
Meaning of "morality" . . . . .	471

Social aspect of morality . . . . .	471
Morality involves choice . . . . .	472
The will must act . . . . .	473
Classification of problems of youth . . . . .	474
The realization of the self . . . . .	475
Vocation . . . . .	475
The zest of life . . . . .	476
Mutual relation of the sexes . . . . .	477
Religion . . . . .	477
Developmental stages of moral responsibility . . . . .	478
Misbehavior in early adolescence . . . . .	480
Characteristic faults . . . . .	480
High-school pupils' self-judgments . . . . .	481
Attitude toward religion . . . . .	482
Attitude toward morals . . . . .	482
The faults of high-school pupils . . . . .	484
Need of specific training . . . . .	485
The school studies and moral training . . . . .	485
A class in morals . . . . .	486
Literature . . . . .	486
Biography . . . . .	490
The social sciences . . . . .	490
Other subjects . . . . .	492
Extra-curricular activities and character development . . . . .	492
Methods of teaching and moral training . . . . .	494
Week-day religious instruction . . . . .	494
Coöperation by the public schools . . . . .	495
 CHAPTER XVIII. WORTHY USE OF LEISURE . . . . .	 498-523
Significance of leisure . . . . .	498
The nature of art and art instruction . . . . .	499
The older art courses illustrated . . . . .	500
A modern course in art . . . . .	501
Design . . . . .	503
Education for expression <i>vs.</i> education for enjoyment . . . . .	503
Education for appreciation . . . . .	504
Individual differences in enjoyment . . . . .	504
Must expression precede appreciation? . . . . .	505
Architecture, sculpture, and painting . . . . .	506
Music . . . . .	506
What is it that the untutored enjoy in music? . . . . .	507
The method of gaining musical appreciation . . . . .	509
Literature . . . . .	510
Pupils' reading interests . . . . .	512
Current literature . . . . .	513

# CONTENTS

xxvii

The drama and the moving picture . . . . .	516
The drama and the literature class . . . . .	517
Amateur theatricals . . . . .	518
Motion pictures . . . . .	518
Play, sport, and outdoor life . . . . .	520
"Social" diversions . . . . .	520

## CHAPTER XIX. HEALTH EDUCATION . . . . . 524-549

Verbal acceptance of the health aim . . . . .	524
Physical defects among school children . . . . .	524
Physical defects among the general population . . . . .	525
Economic loss due to ill health . . . . .	525
Present status of health education . . . . .	526
Recent legislation . . . . .	527
Education of public needed . . . . .	528
Aims of health education . . . . .	528
Personal hygiene . . . . .	529
Social hygiene . . . . .	530
Industrial hygiene . . . . .	531
Sex education . . . . .	532
When should instruction be given? . . . . .	533
What is the content of instruction? . . . . .	533
Method of instruction . . . . .	534
Organization of teaching materials . . . . .	534
Gymnastics . . . . .	536
Play, games, and dancing . . . . .	537
Interscholastics athletics . . . . .	538
Athletics are over-emphasized . . . . .	539
Health values of athletics . . . . .	539
Athletics for all students . . . . .	540
Subjects contributing to health knowledge . . . . .	541
Hygiene and biology . . . . .	541
Social sciences . . . . .	542
Home economics . . . . .	542
Correlation needed . . . . .	543
A hygienic school environment . . . . .	543
Mental hygiene . . . . .	544
Importance of early adolescence for mental hygiene . . . . .	545
A program of health education . . . . .	546

## CHAPTER XX. TRAINING FOR INDUSTRY, AGRICULTURE, AND COMMERCE . . . . . 550-583

Changes in industry affecting secondary education . . . . .	550
Important changes in training of prospective workers . . . . .	551

Choice of vocation difficult . . . . .	551
Industrial intelligence needed . . . . .	552
The problem of the school . . . . .	552
Vocations for which training is necessary . . . . .	553
Factors conditioning vocational curricula in a given school . . . . .	554
Adaptation to local environment . . . . .	554
Selection of vocational curricula . . . . .	556
General <i>vs.</i> specific vocational education . . . . .	557
Results of guidance program inconclusive . . . . .	557
What use do pupils make of their training? . . . . .	558
Training needed for success in industry . . . . .	560
Shop conditions only partially reproduced in school . . . . .	562
Conclusion . . . . .	563
The agriculture curriculum . . . . .	564
Production . . . . .	564
Marketing . . . . .	564
The rural community . . . . .	565
Agriculture courses . . . . .	566
The commercial curriculum . . . . .	567
Junior business training . . . . .	567
Senior-high-school courses . . . . .	568
Curriculum recommended by the sub-committee of the Com- mission on the Reorganization of Secondary Education . . . . .	569
Education for the manufacturing and mechanical occupations . . . . .	572
Junior-high-school courses . . . . .	572
Senior-high-school courses . . . . .	574
"Special" curricula . . . . .	574
Vocational values of the "academic" subjects . . . . .	575
How specific industrial training is to be provided . . . . .	576
All-day vocational schools . . . . .	577
Schools for employees . . . . .	577
Part-time education . . . . .	577
The Smith-Hughes Act . . . . .	579
How the law affects the school . . . . .	581
Proposed revisions . . . . .	581
CHAPTER XXI. THE PROGRAM OF STUDIES . . . . .	584-614
The problem of the chapter . . . . .	584
The core curriculum . . . . .	584
In the junior high school . . . . .	585
In the senior high school . . . . .	587
Consecutive organization of subject-matter needed . . . . .	587
Variables and free electives . . . . .	587
Location of subject-matter by grades . . . . .	589
Two opposing theories . . . . .	589

# CONTENTS

xxix

A practical viewpoint . . . . .	590
Correlation of subject-matter . . . . .	592
The principal's council . . . . .	594
Teachers . . . . .	595
Illustrative programs of study . . . . .	595
For the junior high school . . . . .	595
A program of studies for the small four-year high school . . . . .	596
Program of studies of a city system . . . . .	599
Program of studies for Pennsylvania senior high schools . . . . .	602
Pupils studying various subjects . . . . .	603
Pupils enrolled in various curricula . . . . .	606
Specialized curricula . . . . .	607
In the junior high school . . . . .	607
The college preparatory curriculum . . . . .	607
The general curriculum . . . . .	608
Problems in curriculum-making . . . . .	608
A single general curriculum <i>vs.</i> several specialized curricula . . . . .	609
An apparently rational curriculum may prove unworkable . . . . .	612

## CHAPTER XXII. EXTRA-CURRICULAR ACTIVITIES . . . . . 615-641

The new conception of extra-curricular activities . . . . .	615
Recognition of extra-curricular activities one phase of the social- ization of secondary education . . . . .	616
Education principles supporting extra-curricular activities . . . . .	617
Self-activity . . . . .	618
Interest . . . . .	618
Real education improves existing conditions . . . . .	619
Guiding principles in organizing extra-curricular activities . . . . .	619
The home-room organization . . . . .	621
Organization . . . . .	621
The home room and administrative routine . . . . .	621
The guidance function of the home-room teacher . . . . .	622
Group activities . . . . .	622
The assembly . . . . .	623
Matters to be minimized or avoided . . . . .	623
Types of assembly programs . . . . .	624
Arrangement of program . . . . .	626
School clubs . . . . .	626
Club organization illustrated . . . . .	627
The high-school fraternity . . . . .	628
Student publications . . . . .	629
Publications suitable to the secondary school . . . . .	630
Faculty control . . . . .	631
Organization of the staff . . . . .	631
Student funds and finances . . . . .	633



Athletics . . . . .	635
Student participation in school government . . . . .	636
Organization of student council . . . . .	637
Functions of the student council . . . . .	638
How to begin student government . . . . .	639
INDEX . . . . .	643

## LIST OF TABLES

1. Decades of Origin of High Schools in the Various Divisions of the Country . . . . .	28
2. Size of High-School Enrollments . . . . .	55
3. Populations of Cities Supporting High Schools . . . . .	56
4. Location of College Students by Departments . . . . .	81
5. Distribution of Students in Professional Schools . . . . .	81
6. Graduates from Public High Schools Continuing Their Education . . . . .	82
7. Number of College Students to Each 1000 Secondary Pupils . . . . .	82
8. Total Periods Devoted to the Various Subjects in German Gymnasia . . . . .	122
9. Cities Reporting Junior High Schools . . . . .	139
10. Percentages of Municipal Funds Devoted to Schools . . . . .	156
11. Current Expenses per Student in Average Daily Attendance in 195 City School Systems . . . . .	157
12. Cost per Pupil in Different Enterprises of School Systems of Illinois Cities . . . . .	157
13. Relation of Pubescence to Age in 4800 Boys . . . . .	173
14. Relation of Pubescence to Age in 1241 Girls . . . . .	173
15. Percentile Scores for Seniors in Indiana High Schools . . . . .	196
16. Theoretical Distribution of Intelligence . . . . .	207
17. Intelligence Quotient and Occupational Group of Elementary and High-School Pupils . . . . .	211
18. Vocational Choices of 2844 High-School Seniors . . . . .	216
19. Vocational Choices of 1644 Seventh-Grade Pupils . . . . .	217
20. Percentages of Pupils Who Reach Each Grade . . . . .	225
21. Percentages of Seventh-Grade Pupils Retained in Remaining Grades . . . . .	227
22. Survival Percentages, Grades Nine to Twelve . . . . .	227
23. Percentages of Pupils under Age, of Normal Age, or over Age for Their Grade . . . . .	229
24. Percentage Distribution by Sex of 1,645,171 High-School Pupils . . . . .	232
25. Percentage of Total at Each Age Attending School . . . . .	233

26. Causes of Failure Assigned by High-School Teachers in La Crosse, Wisconsin . . . . .	243
27. Ninth-Grade Pupils' Expectation of Remaining in School . . . . .	244
28. Percentages of 7000 Illinois High-School Seniors Choosing Various Occupations Compared with Percentages of All Persons Over Eighteen Years of Age Engaged Therein according to the 1920 Census . . . . .	273
29. Distribution of the Vocational Choices of Senior Boys in Illinois High Schools with Reference to Their Intelligence Quotients . . . . .	275
30. Vocational Choices of Ninth- and Tenth-Grade Pupils Compared with Choices of Eleventh- and Twelfth-Grade Pupils . . . . .	278
31. Distribution by Age and Sex of Young Workers in Commercial Occupations . . . . .	282
32. Distribution of 2365 High-School Graduates in Five North-Central States . . . . .	284
33. Median Intelligence Quotients Necessary for Success in the Several Subjects . . . . .	290
34. Typical Scores for Occupational Groups in the Army (Intelligence Test Alpha) . . . . .	293
35. Replies of 2069 College Freshmen in Eleven Colleges and Universities to the Question: "Did you Know that You were Going to College when You Entered High School?" . . . . .	312
36. Purposes for Which Intelligence Tests are Used in Junior-High and High Schools in 215 Cities having Populations of 10,000 or More . . . . .	316
37. Number of Errors, Proportional Ranking, Errors per Ten Thousand Words in Themes of Ninth-Grade Students and College Freshmen . . . . .	382
38. The Percentage of Superintendents Who for Certain Topics Favor Elimination, Less Attention, Elimination or Reduction of Time, and More Attention . . . . .	389
39. Scientific Interests of Boys and Girls in General Science Classes . . . . .	398
40. Scientific Interests of Adults . . . . .	399
41. Newspaper References to Science . . . . .	400
42. Newspaper Articles Dealing with Biological Science . . . . .	402
43. Urban and Rural Population of the United States, 1880-1920 . . . . .	417
44. Social Studies Offered in 6624 High Schools . . . . .	420

45. Social Sciences in High Schools of the North Central Association . . . . .	421
46. The Percentage of Space Allotted to Each of These Periods in American History by the Study of Twenty-Three Elementary-School Texts Published 1860-1912; Eight Current Histories; the Committee of Eight Report; and Eight Early Texts Published before 1860 . . . . .	426
47. Comparing Eight Early and Eight Current Commonly Used Textbooks in American History of Elementary and High-School Grade in Percentage of Space Devoted to Political, Military, and Social and Economic Material .	428
48. Frequency of Reference in Magazines to Continents, Foreign Cities, and American Cities . . . . .	431
49. Manual Arts Based upon Home Repair . . . . .	468
50. How High-School Pupils Score Themselves on Moral Traits . . . . .	483
51. High-School Pupils' Statements of Their Own Faults .	484
52. Do You Ever Engage in Any of the Following Practices? Affirmative Replies of High-School Pupils- . . . .	485
53. Most Popular Books of Pupils of Secondary-School Age	514
54. Most Popular Magazines of Pupils of Secondary-School Age . . . . .	515
55. Frequency of Attendance of High-School Pupils at the Movies . . . . .	519
56. Percentage of Children Showing Specified Defects, Boston City Schools . . . . .	525
57. Total Persons Ten Years of Age and over Engaged in Gainful Occupations . . . . .	553
58. Percentage Distribution of Graduates of Thirteen Special-Type High Schools . . . . .	559
59. Percentages of Total Number of Students in Certain Studies in Public High Schools since 1890 . . . . .	605
60. Enrollment by Curricula in Public High Schools . .	606



## LIST OF FIGURES

1. Boys and Girls in School and not in School, 1920 . . .	59
2. Percentages Showing the Comparative Rates of Increase in the Total Population, the Total Enrollment in Public and Private High Schools and Preparatory Departments of Universities and Colleges, and the Total Number of Students (Excluding Preparatory Students) in Universi- ties, Colleges, and Professional Schools, from 1890 to 1922 . . . . .	64
3. The Divisions of the Public School System and Their Purposes . . . . .	79
4. Adult Mental Age . . . . .	182
5. Range of Ability in Algebra among Ninth-Grade Pupils .	195
6. Intelligence Test Scores of Continuation and Regular School Pupils Combined . . . . .	197
7. Overlapping of Abilities among Pupils of Grades Six, Seven, and Eight . . . . .	198
8. The Theoretical Probability Curve . . . . .	199
9. Number of Pupils out of Each 1000 Beginners in 1907 Who Reached the Various Grades . . . . .	226
10. Children in the High Schools of Four Cities from Each Occupational Group for Every 1000 Males over Forty- Five Years of Age Engaged in that Occupation in the Four Cities, according to the Federal Census for 1910 .	236
11. Showing for Each Occupational Group the Number of Students in the Senior Year for Every 100 in the Fresh- man Year of the High School . . . . .	237
12. Distribution of 20,389 Graduates from 596 Middle- Western High Schools . . . . .	284
13. Educational Aims and Objectives . . . . .	362
14. Oral, Written, and Graphic Expression . . . . .	364





# SECONDARY EDUCATION



## PART I

### THE SYSTEM OF PUBLIC EDUCATION



# SECONDARY EDUCATION



## CHAPTER I

### EARLY AMERICAN SECONDARY SCHOOLS

**Purpose of the chapter.** No social institution is really understood without reference to its origin. This statement applies with particular force to the American secondary school. A study of its beginnings, a scrutiny of the reasons for placing this or that subject in the program of studies, an examination of controlling policies, and a search for the factors influencing organization and administration cannot be otherwise than beneficial. On the one hand, they show that the present order is not fixed; on the other, they increase the judgment of those who would improve the present order through change.

Two institutions of secondary education preceded the American high school. The first of these was the Latin grammar school; the second, the academy. Why these schools came into existence, what they strove to accomplish, how they sought to achieve their aims, the sources of their financial support, why they were supplanted, and what their influence has been upon the public school system, are the chief problems of Chapter I.

The chapter also sketches the rise of the high school. The principal topics considered are the reasons for the establishment of the first high schools, and their early growth and development. The system of public secondary education as it is developing is the subject of other chapters of Part I.

## THE LATIN GRAMMAR SCHOOL

The place of the Latin grammar school in Europe. The Latin language was to Europe for centuries what the author of Esperanto hoped his invention would be to the modern world — a universal medium of written and oral speech. Educated Frenchmen, Germans, or Englishmen could correspond or converse in Latin, books were written in Latin, and university lectures were given in Latin. Not only was Latin the mark of a gentleman's training, but in England it was said that the "diplomatist, the lawyer, the civil servant, the physician, the naturalist, the philosopher, wrote, read and to a large extent spoke, and perhaps thought in Latin." Merchants, clerks, town officials, or travelers needed a knowledge of Latin as a spoken as well as a written language. The congregation in a university of large numbers of students, and their subsequent scattering, meant the dissemination of Latin. Indeed, it is said that innkeepers and merchants had to adapt themselves to some sort of Latin speaking, and that even the beggars made their appeals to student passers-by in Latin.

The Renaissance, in which the modern world had its origins, began in Italy during the fourteenth century, and reached its height throughout the countries of Western Europe in the fifteenth and sixteenth centuries. In learning, the chief consideration was the intelligent and appreciative study of Latin and Greek literature. The Renaissance not only intensified the study of Latin, but it re-directed attention to original sources, and caused mediæval Latin to be replaced by the language of ancient Rome.

The monastic and cathedral schools had, during the Middle Ages, occupied a position essentially secondary in nature. Their curriculum was enriched through the literary influences of the Renaissance, and their whole organization was extensively revised. The achievement of

piety, knowledge, and the art of expression were the aims of the revised schools, and in the beginning knowledge was more important than the art of expression. But since knowledge was contained to such a large extent in Latin, emphasis in time came to be placed upon the mastery of Latin, and schoolmasters busied themselves almost exclusively with the language. Such was the origin of the Latin grammar schools. A surprisingly large number were established on the Continent and throughout the British Isles. The Latin grammar school was familiar to the early settlers in America, not only because they had lived beside it in England, but because many had attended it. Little wonder, then, that the Latin grammar school was transplanted early and almost without change to America.

**The Latin grammar school in America.** A number of unsuccessful attempts had been made to establish Latin grammar schools before the first permanent institution of this type was founded in Boston, in 1635. Subsequently, many schools were opened in Massachusetts, where the institution had its greatest development, and in the other New England colonies. In the Middle Atlantic States, and especially in the South, such schools were not so plentiful, because in those places commercial interests were early developed which were not served by a Latin curriculum. In general, however, it may be said that the Latin grammar school was the dominant institution for secondary education in America until approximately the middle of the eighteenth century.

*The curriculum.* The purpose of the Latin grammar school was to prepare boys for college, after which they were to enter the professions, chiefly the ministry. Subjects were, therefore, taught with strict reference to college entrance requirements. From that very interesting pamphlet, *New England First Fruits*, we learn that in 1642 the

requirements for entrance to Harvard (founded in 1636) were:

When any Scholar is able to understand Tully, or such like classically Latine Authore *extempore*, and make and speake true Latine in Verse and Prose, *suo ut aiunt Marte*; And decline perfectly the Paradigm's of *Nounes* and *Verbes* in the *Greek* tongue: Let him then and not before be capable of admission into the Colledge.

Nearly a hundred years later the laws of Harvard College contained the following prescription:

Whoever upon examination by the President, and two at least of the Tutors, shall be found able *extempore* to read, construe, and parse Tully, Virgil, or such like common classical Latin authors, and to write true Latin in prose, and to be skilled in making Latin verse, or at least in the rules of Prosodia, and to read, construe, and parse ordinary Greek, as in the New Testament, Isocrates, or such like, and decline the paradigms of Greek nouns and verbs, having withal good testimony of his past blameless behavior, shall be looked upon as qualified for admission to Harvard College.

Requirement for admission to the Boston Latin school was, until a few years before the Revolution, ability to read well. However, many of the boys had been taught something of writing and even English grammar in the private schools where they learned to read, so that their preparation was in excess of the requirement. On the other hand, we find frequent complaints made by the Latin grammar school masters against the previous preparation of their pupils. Attendance upon the Latin school, in early colonial days, began at the age of seven or eight, and the course was seven years in length. Boys were ready for college, therefore, at about the same age they now enter the four-year high school. These arrangements were modified later, for in 1789 the regulations of the Boston Latin School specified that boys must be at least ten years of age when they entered, and that they should remain not longer than four years.

Some Greek was taught, and boys were permitted to "attend the public reading schools at such hours as the visiting committee shall direct." With these exceptions, however, the curriculum was almost entirely Latin, even to the extent of urging the boys to use it in their play. The deep religious motive of the colonists found expression in the frequent requirements that the pupils be held for reports of the sermons which they were required to attend on Sundays, and that they be examined in the catechism at stated intervals.

*Financial support.* Early accounts of the establishment of the Latin grammar school in New England contain numerous instances of town meetings in which leading citizens urged the necessity of schools. To get them started, many well-to-do inhabitants made personal subscriptions of money, and some set aside portions of their estates for school purposes. Thus we have an account of a "general meeting of the richer inhabitants," where a subscription of something over forty pounds was made "towards the maintenance of a free schoolmaster for the youth with us, Mr. Daniel Maude being now also chosen thereunto." There are also numerous instances of towns voting tracts of land, the rents from which went for the partial maintenance of schools. Dorchester voted "that there shall be a rent of 20lb a year forever imposed upon Tomsons Island . . . towards the maintenance of a school in Dorchester. This rent of 20lb yearly to be paid to such a schoolmaster as shall undertake to teach English, Latin, and other tongues, and also writing. The said schoolmaster to be chosen from time to time by the freemen."<sup>1</sup> These sources were supplemented by fees from the students. Later, a general tax furnished a substantial portion of the support.

<sup>1</sup> Brown, E. E. *The Making of Our Middle Schools* (1902), pp. 135-38.



The Latin grammar school was, to all intents and purposes, a public institution. In most places in Massachusetts it was established by the town, directed by the town, and it was for the boys of the town. Even when support came from private sources, and direct control was exercised by a board of trustees, these purposes were not invalidated to any great degree. That it was the purpose in Massachusetts to have a system of secondary schools, essentially public in character, is shown by the Massachusetts Bay Colony Law of 1647.

**The Law of 1647.** In 1642, Massachusetts had passed a law directing that all children be taught "to read and understand the principles of religion and the capital laws of the country," and that they be trained "in learning and labor and other employments profitable to the Commonwealth." In 1647 a more comprehensive law was passed, the provisions of which are as follows:

It is therefore ordered, that every township in this jurisdiction after the Lord hath increased them to the number of 50 householders, shall then forthwith appoint one within their town to teach all such children as shall resort to him to write and read, whose wages shall be paid either by the parents or masters of such children or by the inhabitants in general, by way of supply, as the major part of those that order the prudentials of the town shall appoint; provided, those that send their children be not oppressed by paying much more than they can have them taught in other towns; and it is further ordered, that where any town shall increase to the number of 100 families or householders, they shall set up a grammar school, the master thereof being able to instruct youth so far as they may be fitted for the university, provided, that if any town neglect the performance hereof above one year, that every such town shall pay 5 pounds to the next school till they shall perform this order.

The Law of 1647, which sought to improve the one of 1642, has been called the most important piece of school legislation in our history. Taken together, these laws contain

the essential elements of our public school system, including compulsory general education and public support of elementary and secondary education. The Law of 1647 in particular furnished a model for much legislation in other States. It was, however, too far in advance of its time for enforcement.

**Colonial elementary schools.** In England no system of elementary education (as the term is now understood) was in existence when America was settled, and for many years reading, writing, and the rudiments of computation were taught in the English colonies of this country in a somewhat makeshift manner. The dame school and the writing school of colonial days occupied, in the English settlements, a place similar to our present elementary school, while the parish school of Europe was found in the colonies settled by the Germans and Scandinavians.

The dame school, so called because instruction was given by a woman in her own home, represents the first primary school. Instruction was concerned with the A B C's and the beginnings of reading. Subject matter was entirely religious or moral in character. Some of the dame schools were publicly supported, but for the most part they were private. Fees were small. It is reported, for example, that "Goodwife Mirich is teaching the children to read at three pence a week for every child." An interesting sidelight upon disciplinary methods is the comment that a "rap of the thimble upon the head of a disorderly pupil" was not an uncommon occurrence. The thimble was handy, because the dames were often engaged in knitting or sewing during the time they were teaching. Educational results were small, for instruction was carried on under poor conditions, and the qualifications of the dames were often meager in the extreme.

The writing school of England was also transplanted to

America. Two forms of organization were found: sometimes the pupils went at certain periods to a special school, where writing and simple accounts were taught; sometimes the "scrivener" visited the grammar school for a month or six weeks each year to give this instruction. The master was then supposed to keep up the practice in writing. The writing school did not become common in New England. Reading, writing, and figuring were later taken over by the elementary school, which became the school of the three R's. The elementary school thus combined the dame school and the writing school. English grammar, history, and geography were not taught until the end of the colonial period.

The Scandinavians and the Dutch and German colonists set up the Lutheran parish school of continental Europe. The pastor was usually the teacher, and he gave instruction in religion, singing, reading, and sometimes writing. The Dutch schools, at least, were to all intents and purposes public. Although tuition was regularly charged and the church had more or less voice in their management, they were open to all the children, were controlled by civil authorities, and were supported by public funds.<sup>2</sup> The parish schools flourished throughout the whole of the colonial period.

**Student life in the Latin grammar school.** The life of the boy attending a Latin grammar school was not entirely an enviable one. In the summer he went to school at seven in the morning and in the winter at eight, and he remained in school until five in the evening, with the exception of a noon recess from eleven until one. Most of his time was spent under the direction of the master, who saw to it that he applied himself to Latin. Although there was little chance to play, the spirit was not lacking. The boys

<sup>2</sup> Kilpatrick, W. H. *Bur. of Educ. Bull.*, 1919, No. 12.

managed to squeeze in various games in the summer; they went swimming and played "with ball and bat." In winter there were skating and coasting. The famous altercation between the Latin School boys and the British soldiers on the Boston Common gives sidelights upon the sports and spirit of colonial youth. Evidently a long school day with little activity was provocative then as now of disciplinary problems, for according to one account "special care likewise must be taken of their Morals, that none of the Scholars presume to tell a Lie, or Curse or Swear, or to take or do any Thing obscene, or Quarrel and Fight, or play at Cards or Dice, or set in to Drinking, or to any Thing else that is contrary to good Manners." The master was given free sway in administering the rod, although parents might expostulate with him if the punishment were too severe. Investigations of disciplinary cases by the school committee were not unknown. Sometimes these resulted in the dismissal of the pupil and occasionally in a recommendation to the inhabitants that the master be dismissed.

**The influence of the Latin grammar school.** The first permanent Latin school established in America still flourishes, although it is now housed in a modern building, and is located on a new site. A few other schools whose names include the word "Latin" still remain as remnants of the time of the ascendancy of the Latin grammar school. However, the influence of the curriculum is still felt. It was transmitted to the academy, and was for years carried with some modifications along with the various "practical" studies. When the chief function of the old-line academies became preparation for college, they naturally maintained the close articulation with the colleges formerly held by the Latin grammar school. This meant the emphasis of Latin as a subject preparatory for college. It is impossible to-day to enter some of the privately endowed colleges of the East

without Latin; in many more it is impossible to secure the A.B. degree without Latin.

The Latin curriculum (or the "classical" or the "college preparatory," which usually include Latin) of the public secondary school is likewise a bequest from the Latin grammar school. Historically, it has not been long since Latin was required of most high-school pupils, and the day is even less distant when public universities asked that matriculants present from two to four units of Latin. In those States where privately endowed colleges are strong, the influence of their entrance requirements upon the public high school is great. Latin becomes a required course for practically every boy and girl who expects to enter a higher educational institution. All this has a tendency to place Latin and the other subjects recognized as suitable for college preparation upon a high plane — they are, in short, the aristocratic subjects. For this very reason many pupils, whose abilities lie in other directions, desire to study them.

A purpose of the Law of 1647 was "that learning may not be buried in the grave of our fathers in the church and commonwealth." In those days of hazard and strenuous endeavor, when institutions of learning might easily have been neglected for the more pressing business of earning a livelihood, the Latin grammar school performed the function of keeping learning alive. Both the law and the schools were expressions of the disposition of the colonists. The law has been called the foundation of our public school system, while in the system of Latin grammar schools we find the antecedent of our present public secondary schools.

#### THE ACADEMY

**The rise of the academy.** By the middle of the eighteenth century the time was ripe in America for a new institution

of secondary education. The Latin grammar school had always been somewhat aristocratic, and its curriculum narrow. Social distinctions existing in England at the time of the settlement of the American colonies had by no means been left behind. They were manifest in the selection of students for the Latin grammar schools. For a century and a quarter Harvard listed students according to the rank and social standing of their parents. With the rise of the democratic spirit, especially during the Revolutionary period, there was a tendency to turn from a school fostering social distinctions to one more democratic in nature.

A century and a quarter of development had seen the emergence of new social and economic demands which the Latin grammar school did not meet. There had been a great development of commercial and shipping interests, which were in the hands of what might be called a well-to-do middle class. The Latin grammar school offered no suitable training for young people desirous of entering these pursuits. New towns had been settled by the descendants of the men who migrated from England. In these towns the spirit of religious intolerance was not strong, and interest in trade was keen. Before the academy period came to an end States had been settled to the westward by men without much religious zeal but with a great spirit of democracy. Finally, the whole academy movement was stimulated by the advances of science and their application to industry, and by the decline of Latin as a medium of communication.

The academy movement was also found in Europe, although it took place earlier than in America and was marked by ups and downs. However, the general purpose of the movement was the same. There was a rejection of the curriculum sponsored by the Latin grammar school, and an



attempt to found schools which would prepare children of the middle classes for their various callings. In England, Defoe's *Essay upon Projects*, with which Franklin was familiar, and Milton's *Tractate on Education*, alike sketched the plan of an academy. Due to religious differences instruction was at first carried on clandestinely and by the tutorial plan; later there emerged a considerable number of institutions termed academies. After a number of trials a "real" school was established in Germany, whose purpose was to give a practical education to the middle classes. The first *real* school (*Realschule*), founded by Haecker in Berlin (1747), was very similar in organization to Franklin's Philadelphia academy, then in the process of formulation. After a period in which the *Realschule* lost its distinctive characteristics it was revived and accorded state recognition. Modified to some extent during the school reform of 1924, it forms an integral part of the German secondary system to-day.

Although the academy movement first began in Europe, and although European academies undoubtedly exerted some influence upon American academies, the institution was not transplanted to America as was the Latin grammar school. That European and American academies were similar is due to the fact that they grew from similar conditions. In this country the academy was the dominant institution of secondary education from 1750 or 1775 until 1850.

**The first academies.** In 1743 Franklin sketched the plan of the first American academy. For various reasons it was not feasible to open the school until six years later, when Franklin prepared a second essay relating to education. Franklin's comments and the purposes of the new school, as stated by him and by the trustees, are characteristic of the early academy movement, so that it is well to examine them in some detail.



After affirming his belief in education "as the surest foundation of the happiness both of private families and of commonwealths," and regretting the decline of learning in America, Franklin proceeded to outline his plan:

It was further proposed that a building should be provided in a healthful situation, with garden, orchard, meadow, and field; and furnished with a library, philosophical apparatus, and other appliances. There should be a rector and the necessary number of tutors under him. Provision should be made for boarders. Sports were recommended for the physical good of the students: running, leaping, wrestling, and swimming.

"As to their studies [said Franklin], it would be well if they could be taught everything that is useful, and everything that is ornamental. But art is long and their time is short. It is therefore proposed, that they learn those things that are likely to be most useful and most ornamental; regard being had to the several professions for which they are intended."

All were to be taught penmanship, drawing (with perspective), arithmetic (with accounts, and the first principles of geometry and astronomy), and the English language (grammar, oral reading, and composition). The greatest stress was laid upon studies in English. Authors of the late seventeenth and the early eighteenth century were recommended for study; but readings in history were still more strongly emphasized and were made to constitute the vital center of the whole plan of instruction. "If history be made a constant part of their reading, . . . may not almost all kinds of useful knowledge be that way introduced to advantage?" Geography, chronology, ancient customs, oratory, civil government, logic, languages, and even morality and religion, were to find their first entrance into the attention and interest of the students through the channel of history.

But, the proposals continued, there should be also readings in natural history, both because of the utility of its several divisions and for the sake of the improvement of conversation. This study should be accompanied by practical exercises in agriculture and horticulture. Commerce, industry, and mechanics would be entertaining and useful studies for all.

With all this the academy should cultivate "that benignity of mind, which . . . is the foundation of what is called good breeding."

and should impress upon the minds of the youth the idea of what constitutes true merit, which is "an inclination, joined with an ability, to serve mankind, one's country, friends, and family." True learning gives or increases the ability to perform such service.

Franklin would gladly have made his academy an English school pure and simple. But he yielded to men of wealth and learning whose coöperation was needed, and included both ancient and modern languages.<sup>3</sup>

*The purposes of the academy.* As stated by the board of trustees, when they asked for funds from the Philadelphia treasury, the purposes were as follows. Apparently the trustees took care to include practical considerations which would make an appeal.

That the Youth of Pensilvania may have an opportunity of receiving a good Education at home, and be under no necessity of going abroad for it; Whereby not only considerable Expense may be saved to the Country, but a stricter Eye may be had over their morals by their Friends and Relations.

That a number of our Natives will be hereby qualified to bear Magistracies, and execute other public offices of Trust, with Reputation to themselves & Country; There being at present great Want of Persons so qualified in the several Counties of this Province. And this is the more necessary now to be provided for by the English here, as vast Numbers of Foreigners are yearly imported among us, totally ignorant of our Laws, Customs, and Language.

That a number of the poorer Sort will be hereby qualified to act as Schoolmasters in the Country, to teach Children Reading, Writing, Arithmetic, and the Grammar of their Mother Tongue, and being of good morals and known character, may be recommended from the Academy to Country Schools for that purpose; The Country suffering at present very much for want of good Schoolmasters, and obliged frequently to employ in their Schools, vicious imported Servants, or concealed Papists, who by their bad

<sup>3</sup> Brown, E. E. *The Making of Our Middle Schools* (1902), pp. 180-81. Quoted by courtesy of Messrs. Longmans, Green & Co., Publishers, New York and London.

Examples and Instructions often deprave the Morals or corrupt the Principles of the Children under their Care.

It is thought that a good Academy erected in Philadelphia, a healthy place where Provisions are plenty, situated in the Center of the Colonies, may draw a number of Students from the neighboring Provinces, who must spend Considerable Sums yearly among us, in Payment for their Lodging, Diet, Apparel, &c., which will be an Advantage to our Traders, Artisans, and Owners of Houses and Lands . . . <sup>4</sup>

*The Phillips academies.* The Phillips family established two academies, one in 1778 at Andover, Massachusetts; another in 1781 at Exeter, New Hampshire. These schools are credited with "giving standing" to the academy as an institution of secondary education. Their purpose, as stated in the deed of gift of Phillips Andover, was:

to lay the foundation of a public free school or ACADEMY for the purposes of instructing Youth, not only in English and Latin Grammar, Writing, Arithmetic; and those Sciences wherein they are commonly taught; but more especially to learn them the GREAT END AND REAL BUSINESS OF LIVING . . . it is again declared that the *first* and *principle* object of this Institution is the promotion of TRUE PIETY and VIRTUE; the *second*, instruction in the English, Latin, and Greek Languages, together with Writing, Arithmetic, Music, and the Art of Speaking; the third, practical Geometry, Logic, and Geography; and the *fourth*, such other liberal Arts and Sciences or Languages, as opportunity and ability may hereafter admit, and as the TRUSTEES shall direct.

**The curriculum.** From the foregoing quotations it will be apparent that the definite purpose of the academy was to supply training demanded by the social and economic needs of the times. The demands of prospective merchants, tradesmen, navigators, surveyors, and the like received especial attention. The academies were generally looked upon as a source of supply for teachers. Mean-

<sup>4</sup> Brown, E. E., *op. cit.*, p. 185.

while, the needs of the professional classes were not overlooked. Franklin's institution and the Phillips academies were not exceptional in the matter of making provision for the ancient languages. Sectarianism never strongly influenced the curriculum of the academy, although the earlier ones were for the most part pervaded by a deep religious spirit — which waned as time went on and as the affairs of Church and State were more widely separated.

The existence of many academies depended upon their ability to attract students, hence it was but natural for them to offer instruction in any subject for which there was a demand. The result was an extraordinarily large range of subjects. Monroe gives a list of about 75 which, in 1837, were reported to the Regents of the University of the State of New York as being taught by the academies of the State at that time. The list includes the various branches of mathematics, science, English, social sciences, and surveying, philosophy, law, the ancient and modern languages, theology, business subjects, music, navigation, embroidery, painting, and the principles of teaching.<sup>5</sup> Cubberley states that 149 new subjects for study appeared in the academies of New York between 1787 and 1870. Those most commonly taught were algebra, astronomy, botany, chemistry, general history, United States history, English literature, surveying, intellectual philosophy, declamation, debating, etc.<sup>6</sup>

As there was freedom and experimentation in the matter of subjects, so there was freedom and experimentation in methods of teaching. Stress was placed upon the study of things rather than words. Many excellent teachers devoted their energies to the academy. There were many non-productive efforts, but on the whole considerable advance was made in methods and in textbooks.

<sup>5</sup> Monroe, P. *Principles of Secondary Education* (1914), p. 58.

<sup>6</sup> Cubberley, E. P. *Public Education in the United States* (1919), p. 187.

In contrast with the Latin grammar school, whose curriculum ran parallel to the elementary school, the academy built upon the curriculum of the common school. It received pupils who had completed an elementary education, and gave them a secondary education which fitted them for active participation in the affairs of daily life or for entrance to college. Indeed, it encroached upon the field of the college to such an extent that entrance requirements were materially increased. It thus made an important contribution in the development of an articulated school system.

In early colonial days the education of women was regarded with scant favor. Girls were to be taught reading, writing was desirable, and a little arithmetic was not objectionable. Higher education was regarded as belonging to the province of the sterner sex. As Governor Winthrop expressed it, women should attend to household affairs and not "meddle in such things as are proper for men, whose minds are stronger." However, some girls did receive educational advantages, although they were usually taught at home. English customs in education prevailed in the case of wealthy girls who expected to engage in social life.

This attitude was changed during the ascendancy of the academy, which early made provisions for the instruction of girls. Institutions were founded exclusively for girls, some of which were much the same in all respects as schools for boys. Others were the precursors of the modern finishing school. Sometimes girls were taught in the "female department" of the academy — an arrangement which usually resulted in mixed classes, such as are found to-day in the co-educational high school. The academy is credited with initiating the movement which resulted in the higher education of women in the United States.

**The extent of the academy movement.** Academies were sometimes established to minister to the needs of a local community; again, institutions were founded whose patrons were scattered over a wide area. Schools of the former type were frequently short lived; those of the latter type usually had more substantial financial support and patronage, and were permanent in nature. Some academies disappeared; others became high schools, as in Maryland; others grew into normal schools, as in New York; and others evolved into colleges or universities, as was the case with Franklin's academy. Many "old-line" academies still flourish. For the most part they have turned aside from their original purpose, and now devote their energies to preparing students for college.

The academy spread throughout the entire country. In 1850 there were, according to Inglis, 6085 such schools in the States then comprising the Union, one for each 3811 of the total population. These schools enrolled 263,096 pupils.<sup>7</sup> Even though these figures include many pupils who were enrolled in classes better termed elementary than secondary, it seems safe to conclude that the educational opportunities were adequate to the needs of the general population.

**Student life.** Some students could live at home and attend the academy, but the most could not. Many academies had dormitories and boarding-halls, but when these accommodations proved inadequate students were taken into private houses. In such cases supervisory control was exercised by the school officials. The school day apparently was shorter than it had been in the Latin grammar school. At Leicester, for instance, the morning session opened (in 1820) at eight, and continued until twelve; the afternoon session began at two and lasted until

<sup>7</sup> Inglis, A. J. *Principles of Secondary Education* (1917), p. 175.



six. Some fifteen years later the school day was from eight-thirty until four-thirty, with an hour and a half intermission at noon. The average age of the students was greater than it had been in the Latin grammar school, many of them being in their early twenties. This, together with the character of the studies, probably made disciplinary measures less severe than formerly. A system of fines — so much for talking at meals, so much for defacing a book — seems to have had considerable vogue.

The academies were not without their student activities. There were debating and literary societies, and an occasional play. Annual exhibitions were the outstanding social affairs of the year, where educational accomplishments were shown to an admiring public. More time was given to sports. During the early eighteen hundreds at Exeter, for example, a game of football was played in which the whole school was divided into two sides. The game consisted largely in kicking the ball back and forth. Boys played "bat and ball" in the spring. Occasionally the energy which should have been given to athletic sports was vented in a riot between academy students and boys of the neighborhood, much in the same way the "town and gown" contended in the days of the mediæval universities.

**Support and control.** Academies were organized largely through private initiative. Franklin's academy was helped by a substantial subscription. The schools at Andover and Exeter received in the neighborhood of \$150,000 — a large sum in those days — in the form of permanent endowment from the Phillips family. Many schools were established under the auspices of religious denominations, as was Nazareth Hall, in Pennsylvania. That school was first opened by the Moravian Brethren for the education of their own youth; later, however, it was attended by pupils of other creeds. Many academies were business ventures,



and were organized along much the same lines employed by private commercial schools to-day. A tuition fee was general. In practically all the States the academies were incorporated by legislative acts.

In recognition of the efforts of the academy to supply secondary educational advantages to the youth of the land, the States soon came to grant them financial assistance. "Sometimes, as in Maryland, this was done by converting properties of earlier foundations to the uses of these new institutions; sometimes, as in Pennsylvania, by making direct grants from the state treasury; sometimes, as in New York, by the establishment of funds for the special benefit of this type of institution. In several of these commonwealths there was thus built up a genuine state system of secondary schools."<sup>8</sup>

On the other hand, the States did not ask a hand in control or supervision. They might specify, as in Massachusetts, that to receive State aid an academy should serve a community of a certain number of inhabitants, that grants should be distributed to schools in all parts of the State, and that all grants should be in the form of permanent funds; again, they might specify that a certain amount must be raised privately before the school could participate in State aid. The last provision is similar to the one so frequently made to-day by private philanthropists or the educational foundations in the drives for funds by collegiate institutions. As a rule, actual oversight of the academies was left to self-perpetuating boards or other forms of local control. The exception to this statement was the case of New York, where a central system of control and supervision was developed.

**Influence of the academy.** The chief purpose behind the establishment of the first academies constituted one of the

<sup>8</sup> From Monroe, P. *Principles of Secondary Education* (1914), p. 56. Reprinted by permission of The Macmillan Company, publishers.

important contributions of the institution: it gave to boys and girls not desirous of going to college an education usable in the affairs of daily life. In so doing it introduced new subjects and new methods of teaching, and it acquainted the population in general with the idea of secondary education for all.

With the academy rose certain movements which have had far-reaching effect upon American education. It first opened its doors to girls, a step which resulted in co-educational high schools and in higher education for women. It gave attention to the preparation of teachers for the lower schools, and was thus the precursor of the normal schools. It built upon the curriculum of the elementary schools, instead of running parallel to it as the Latin grammar schools had done, and so contributed in the final evolution of the "educational ladder." Likewise, the academy represented a transition in religious affairs.

On the other hand, the academy made no demands for funds through local taxation. It grew steadily for thirty years after the establishment of the first high school, and for another thirty years it competed for supremacy with the high school. It helped to bring in the public secondary school; on the other hand, its strong entrenchment and its private support were impediments to the high school when once it was developed.

### THE HIGH SCHOOL

**The first American high school.** In 1821, Boston established an institution called the "English Classical School"; in 1824, for reasons which are not clear, the name was changed to the "English High School." The motives for this new step were set forth in a report of the school committee presented in the town meeting. They are typical of the reasons for the establishment of other early high schools.

The mode of education now adopted, and the branches of knowledge that are taught at our English grammar schools, are not sufficiently extensive nor otherwise calculated to bring the powers of the mind into operation nor to qualify a youth to fill usefully and respectably many of those stations, both public and private, in which he may be placed. A parent who wishes to give a child an education that shall fit him for active life, and shall serve as a foundation for eminence in his profession, whether Mercantile or Mechanical, is under the necessity of giving him a different education from any which our public schools can now furnish. Hence, many children are separated from their parents and sent to private academies in this vicinity, to acquire that instruction which cannot be obtained at the public seminaries. Thus, many parents, who contribute largely to the support of these institutions, are subjected to heavy expense for the same object, in other towns.

The Committee, for these and many other weighty considerations that might be offered, and in order to render the present system of public education more nearly perfect, are of the opinion that an additional School is required. They, therefore, recommend the founding of a Seminary which shall be called the English Classical School, and submit the following as a general outline of a plan for its organization and of the course of studies to be pursued.

*1st.* That the term of time for pursuing the course of studies proposed, be three years.

*2ndly.* That the School be divided into three classes, and one year be assigned to the studies of each class.

*3rdly.* That the age of admission be not less than twelve years.

*4thly.* That the School be for Boys exclusively.

*5thly.* That candidates for admission be proposed on a given day annually; but scholars with suitable qualifications may be admitted at any intermediate time to an advanced standing.

*6thly.* That candidates for admission shall be subject to a strict examination, in such manner as the School Committee may direct, to ascertain their qualifications according to these rules.

*7thly.* That it be required of every candidate, to qualify him for admission, that he be well acquainted with reading, writing, English grammar in all its branches, and arithmetic as far as simple proportion.

*8thly.* That it be required of the Masters and Ushers, as a necessary qualification, that they shall have been regularly educated at some University.

The Studies of the First Class to be as follows: Composition; Reading from the most approved authors; Exercises in Criticism, comprising critical analyses of the language, grammar, and style of the best English authors, their errors & beauties; Declamation; Geography; Arithmetic continued.

The Studies of the Second Class: Composition, Reading, Exercises in Criticism, Declamation, Algebra (continued); Ancient and Modern History and Chronology; Logic; Geometry; Plane Trigonometry and its application to mensuration of heights and distances; Navigation; Surveying; Mensuration of Superfices & Solids; Forensic Discussions.

The Studies of the Third Class: Composition, Exercises in Criticism, Declamation, Mathematics, Logic, History, particularly that of the United States (continued); Natural Philosophy, including astronomy; Moral and Political Philosophy.<sup>9</sup>

From the quotation it will be noticed that complaint was directed against the inadequate training given in the public schools, which were offering little or nothing of practical importance for the middle classes. The work of the academies was not questioned; indeed, the curriculum of the new school was almost identical with the "English" side of the best academies of the time. On account of the work of the Boston Latin school, there was of course no need of including the college preparatory studies of the academy. Objection was raised, however, against the necessity of sending children away from home to secure an education. From the report of the Boston School Committee in 1821, and from other statements of policy made during the next few years, it is clear that these were the outstanding reasons for the establishment of the first high school.

Why the high school supplanted the academy. Schools similar in nature to the English High School soon made their appearance in other cities. As previously remarked, these institutions were established to furnish at public expense an

<sup>9</sup> Cubberley, E. P. *Readings in the History of Education* (1920), pp. 580-82.

education which would be serviceable to pupils not destined to enter college. The Latin grammar school had been essentially a public institution, but the training it gave was not suitable to the needs of the non-college preparatory group. The academy did meet the needs of these pupils, but it was a private institution, its location made it necessary for many pupils to be away from home, and it charged tuition. It was, therefore, somewhat exclusive in character. An institution was needed which should combine the best characteristics of the Latin grammar school and the academy.

**Legal provisions.** A long struggle, involving many local and religious interests and much bitter controversy, had finally resulted in the acceptance of the principle of public support and control of the elementary school system. The next logical step was to extend public support and control to secondary education. In the matter of legalizing the high school Massachusetts again took the lead, passing, in 1827, a law which served as a model for subsequent legislation not only in Massachusetts, but in other States as well. The important provisions of the law were:

And every city, town, or district, containing five hundred families or householders, shall be provided with such teacher or teachers for such term of time as shall be equivalent to twenty-four months, for one school in each year, and shall also be provided with a master of good morals, competent to instruct, in addition to the branches of learning aforesaid, the history of the United States, bookkeeping by single entry, geometry, surveying, and algebra; and shall employ such master to instruct a school, in such city, town, or district, for the benefit of all the inhabitants thereof, at least ten months in each year, exclusive of vacations, in such convenient place, or alternately at such places in such city, town, or district, as the said inhabitants, at their meeting in March, or April, annually shall determine; and in every city, or town, containing four thousand inhabitants, such master shall be competent in addition to all the foregoing branches, to instruct the Latin and Greek languages, history, rhetoric, and logic.

Until 1850 progress towards the realization of a system of secondary schools was slow. The academy was strongly entrenched, and there were many who bitterly opposed paying taxes to support a "high school to teach rich men's children." Those who had had only a rudimentary education did not understand the purposes of the new subjects, and considered it wasteful to "pay a man \$1800 to teach children to make *x*'s and pot-hooks and gabble parley-vous." Reaction sometimes came in communities which had made considerable progress.

*The Kalamazoo case* (1872). It is not surprising that the right of local boards to establish high schools was tested in the courts, especially when definite legal provision had not been made for such schools. The famous Kalamazoo high school case was of such origin. The contention of the complainants in the suit was, as stated in the decision, "that there is no authority in this State to make the high schools free by taxation levied on the people at large." After reviewing the educational history of Michigan, including a consideration of the various legal provisions for education, the court concluded that:

If these facts do not demonstrate clearly and conclusively a general state policy, beginning in 1817 and continuing until after the adoption of the present constitution, in the direction of free schools in which education, and at their option the elements of classical education, might be brought within the reach of all the children of the state, then, as it seems to us, nothing can demonstrate it . . . neither in our state policy, in our constitution, or in our laws, do we find the primary school districts restricted in the branches of knowledge which their officers may cause to be taught, or the grade of instruction that may be given, if their voters consent in regular form to bear the expense and raise the taxes for the purpose.

This decision furnished the precedent for decisions in other States. By common consent it is placed alongside the law



of 1827 in importance to the development of the high-school system.

**Growth of high schools.** Owing to the inadequacy of public records, it is difficult to determine the number of high schools in existence at any time prior to 1890. Table 1 was compiled by Dexter, who based his figures upon data given in the *Report* of the United States Commissioner of Education for 1902. Dexter says that his figures are somewhat inaccurate, and that they cover but one half of the existing schools. However, the table does show the period of development of the high school. The slow growth during the first thirty years of its existence, and the rapid growth since 1870, is readily noticeable.

Statistics to show the present extent and influence of the high school, together with a discussion of the main features of development within the past thirty years, are presented in Chapter II.

TABLE 1. DECADES OF ORIGIN OF HIGH SCHOOLS IN THE VARIOUS DIVISIONS OF THE COUNTRY<sup>10</sup>

	NORTH ATLAN- TIC	SOUTH ATLAN- TIC	SOUTH CENTRAL	NORTH CENTRAL	WESTERN	TOTAL
1900-1902.....	31	17	30	93	31	202
1890-1899.....	318	91	161	595	155	1320
1880-1889.....	142	47	103	508	29	829
1870-1879.....	121	25	27	298	8	479
1860-1869.....	60	7	3	103	4	177
1850-1859.....	67	1	5	34	1	108
1840-1849.....	27	4	3	9	—	43
1830-1839.....	10	1	1	2	—	14
1820-1829.....	6	—	1	—	—	7
Total.....	782	193	334	1642	228	3179

<sup>10</sup> From Dexter, E. G. *A History of Education in the United States* (1904), p. 173. Reprinted by permission of The Macmillan Co., publishers.



## TOPICS FOR DISCUSSION AND INVESTIGATION

1. Sketch the careers of Ezekiel Cheever, Elijah Corlett, and other famous masters of Latin grammar schools.
2. What were the characteristics of the textbooks used in the Latin grammar school? In the academy? (See chapter 4 of Dexter, in bibliography.)
3. Show the influence of the Lancastrian monitorial scheme of instruction and of the union high school district in the development of the high school.
4. The assertion is sometimes made that our eight-grade elementary school was borrowed from Prussia. Is this true? (See Cubberley, E. P. *Public Education in the United States*, Chapter IX.)
5. What was the character of the elementary schools, from approximately 1825 until 1850? (*Ibid.*, Chapter VIII.)
6. How would the work done in the schools seventy-five years ago compare with the work done in our present schools? (See Caldwell, O. W. and Curtis, S. A. *Then and Now in Education, 1845: 1923*.)
7. Trace the history of your own high school or academy.
8. What is the legal status of the high school in your State?
9. Would a State law compelling all children to attend *public* schools be upheld by the courts? Why, or why not? (See the recent decision regarding the Oregon law.)
10. Could a school board require a fee of high-school pupils to help out with the extra expense attached to the teaching of such subjects as science, manual arts, or home economics? (This question was recently before the people of Seattle.)

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## CHAPTER II

### ELEMENTARY AND SECONDARY EDUCATION

**Purpose of the chapter.** Our public school system comprises elementary, secondary, collegiate, and university divisions, all of which contribute in a broad, general way to the ultimate goal of education, although each has its distinct function. If a real "system" of public education is to exist, the various divisions must be harmoniously related. If aims, materials, and methods for a single year or for a separate division of the school system are to be formulated intelligently, account must be taken of the aims, materials, and methods of the years or divisions preceding and following.

Obviously, the school administrator or the teacher must clearly comprehend the purposes of the division of the educational system in which he works, otherwise his efforts cannot be productive of best results. But the relation between the different units of the system is so close that an adequate comprehension of the purposes of a single unit can be clearly grasped only when the functions of the remaining divisions are understood. Secondary pupils come from the elementary schools, and, if they continue their education, pass into higher educational institutions. The secondary teacher is capable of doing much more effective work when he knows something of the aims and accomplishments of his colleagues in the elementary school. Without this knowledge, he is bound to be more or less in the dark. Furthermore, unless he knows the type of work which advanced schools aspire to do, he cannot be entirely clear as to the purposes of his own teaching.

This and the succeeding chapter will describe the public school system as it is now developing. These chapters will contain, also, statements of the generally accepted purposes of each of its divisions.

### THE ELEMENTARY SCHOOL

**The purpose of the elementary school.** From the standpoint of society, the elementary school is the means by which the child is introduced, with comparative rapidity, to the culture of the race. It is the place where he gains the fundamental knowledge, skill, habits, and ideals of thought, feeling, and action which are necessary for all, regardless of social status, vocation, or sex. It is the institution which provides the integrating or unifying education which is at the foundation of our national life. In a word, it is the function of the elementary school to provide the “general basis for health, equally desirable for all; to develop that practical efficiency in activities shared by all in daily work and intercourse; to develop those ideals and habits of civic and other forms of group activity of equal value to all; and to cultivate interests and means of recreation common to all.”<sup>1</sup> In practice, eight years have been devoted to this task. The general trend of reorganization, however, limits common-school education to six years.

From the standpoint of the child, the elementary school should provide an environment which is not irksome, and which offers ample stimuli for general mental and physical growth. Many stages of child development are traversed during this period of years, and the curriculum must be consistent with the laws of development. New and important contributions are constantly being made to the established body of knowledge concerning physical growth, instinctive and emotional nature, and development of men-

<sup>1</sup> From Bonser, F. G. *Elementary School Curriculum* (1922), p. 62. Reprinted by permission of The Macmillan Company, publishers.

tality; so that the elementary division of the public school system faces the continuous task of arriving at the most appropriate activities for organizing childish instincts and impulses into working habits, of developing desirable modes of activity in observation, expression, and reflection, and of inculcating worthy and abiding interests and ideals.

**Sixth-grade accomplishments.** To give some idea as to what the elementary school should do for the pupil, we may summarize briefly here some of its main accomplishments.

*In English.* Upon completion of the sixth grade, a child should be able to read orally and with intelligence literature suitable to his age, such as *Paul Revere's Ride* or Dickens's *Christmas Carol*. He should have acquired sufficient proficiency in mastering the thought of a printed page to reproduce after one reading the substance of a simple story, news item, or lesson. He should be able to express clearly either in speech or in writing, and without gross incorrectness of grammar, ideas which are entirely familiar to him. The vocabulary which is used in written expression should be spelled correctly. He should be acquainted at least in story form with some of the best literature suitable to his age, including stories from the Bible and the myths and folk-lore which have an appeal for children. He should know a few dozen well chosen books, and be able to find other books in which he is interested, as well as to make use of ordinary reference books.

*In history and geography.* In history, the normal twelve-year-old probably knows something of the biography of certain historical characters, and the stories of a few of the more important historical events, past and present. As history is usually taught in the elementary school, he has probably acquired some information regarding the early settlement of America. From his introduction to a rather formal course in geography he has gained some idea of the

location of the principal countries and cities, an imperfect idea of the industries of the more important countries and cities, and a still more imperfect idea of the relationship between countries. In addition to this — or perhaps better in place of some of this information — he should have fairly definite ideas about the geography of his own locality and State, and be able to imagine the appearance of industrial or commercial centers inhabited by real people. In a similar manner he should be able to imagine geographical areas and foreign countries in something like their true sense, substituting these images for those gained from maps and diagrams, or from brief statements unillustrated by vivid detail.

*In liberal and practical arts.* A child who has finished the sixth grade should be able to sing and draw, and he should know some of the best music, pictures, and other forms of art, and have at least a beginning interest in them. He should possess more or less information in nature study, and, if possible, have a definite interest in some phase of it in science, or some other field that will help in the proper utilization of leisure. He should possess the ability to do simple constructive work and be able to make some of the things that he is interested in. He should know something of the several industries, not from the standpoint of books and other descriptive literature alone, but from visitation and perhaps to a limited extent from participation. In arithmetic he should be able to do simple number work, such as the four fundamentals, common and decimal fractions, and simpler problems in percentage.

*In health.* If he has attended a progressive school, the child of this age will have had training in the fundamental habits of exercise, cleanliness, eating, and sleep. He will doubtless play several dozen games, and belong to at least one team and to one or more societies, such as the Boy Scouts.

**Achievement measured by standard tests.** The last few years have seen a volume of work done in arriving at standards of accomplishment for the various subjects of the elementary grades. Norms are available for the different subjects in many of the grades. This work of standardization represents one of the great educational accomplishments of the age, and points the way to further advance. It should be remembered, however, that accomplishment in the elementary grades cannot be defined solely in terms of standards and norms set up by educational tests. If these become the dominating aims of classroom instruction, it is difficult to see how extreme formalism can be escaped. In determining minimum essentials it should be remembered that correct habits of thought, proper habits of emotional discharge, worthy ideals of conduct, right mental attitudes, and a many-sided interest are at least as important as a fixed knowledge of the fundamentals. Something more than drill is needed to get these ingrained.

**Reorganization of curriculum.** The selection and organization of material for work, study, and play in the grades must, as stated above, be made with reference to the important instincts and capacities of children, and their general growth and development. A great amount of attention is now being devoted to the elementary-school curriculum. It is safe to say that when the material in the elementary course is finally worked over, tested, and adapted to the average age and stage of development of pupils in each grade, a considerable portion of the material now found in its curriculum will be eliminated, more will be rearranged, and at least some of the material now found in the upper divisions of the school will be brought down to the lower grades.

**Articulation of elementary and secondary education.** Assuming the junior-high-school organization, the above



paragraphs indicate roughly the powers and accomplishments of the boys and girls who will comprise the classes of the first year of the secondary school. It is to be repeated that secondary teachers, if they are to do their best work, must know the aims of the elementary school and the degree of success it attains in reaching its aims. Devices found advantageous in stimulating high-school teachers to acquaint themselves with the work of their colleagues in the lower grades, and of encouraging elementary teachers to consider the nature and purposes of the school their pupils will later attend, are described later. Problems in organizing elementary and secondary education, so that breaks in the complete system may be avoided, will likewise receive consideration. Our immediate task consists of examining the purposes of the secondary school.

### THE JUNIOR HIGH SCHOOL

**The function of the junior high school.** A few years ago, when the junior-high-school movement was first gaining momentum, numerous definitions were formulated for this unit of the school system. Although the majority of these definitions possessed value, none was sufficiently inclusive to be generally adopted. More recently definition has given way to standardization, and nearly all of the earlier definitions find a place among the standards of accomplishment tentatively set up for the junior high school.

The term "function" (or "purpose") as applied to the junior high school is not synonymous with educational aim; rather, it indicates an adjustment which will enable the school better to achieve accepted ends. Specific functions or purposes have emerged when a defect in the school has appeared. For example, the articulation of elementary and secondary education has been defective. This is generally recognized. Unification of the school

system, through overcoming the break between the eighth and ninth grades and through preserving and improving the previous relationships existing between the sixth and seventh and the ninth and tenth grades, thus becomes a function of the junior high school. If, on the other hand, elementary and secondary education had been effectively blended, articulation of elementary and secondary education as a function of reorganization would not receive pronounced emphasis.

Since the functions or purposes ascribed to the junior high school represent immediate, pressing problems, they will receive less and less stress as time passes and as reorganization becomes more and more complete. It may, however, be confidently asserted that the junior high school of the future will make provision for any and all of those educational principles, drawn from psychology, hygiene, sociology, and kindred sources, which have been sufficiently established as necessary for the education of boys and girls approximately twelve to fifteen or sixteen years of age. Conversely, any junior high school which fails to make provision for one or more of those established principles will fail to approach the ideal, and an educational philosophy which leaves them out of account will be incomplete.

In the educational literature a variety of statements of the functions of the junior high school has appeared. Lack of space prohibits the citation of more than two of these, which have been selected because of their excellence and because they are the results of entirely different methods of formulation. Nevertheless, the similarity between them will be evident. Differences are found more in the methods of expression, in the number and arrangement of topics, and in relative emphasis than in divergence of fundamental points of view.

*Briggs's statement of functions.* The first is that of Briggs,

and represents the conclusions he arrived at as a result of long study and intimate contact not only with the junior high school, but with the general field of secondary education.

What program, then, is forced upon the schools by this combination of principles and facts? Clearly an intermediate period of education, beginning one or two years before the law releases any pupil from study, an intermediate period in which the schools shall attempt at least five things: first, to continue, in so far as it may seem wise and possible, and in a gradually diminishing degree, common, integrating education; second, to ascertain and reasonably to satisfy pupils' important immediate and assured future needs; third, to explore by means of material in itself worth while the interests, aptitudes, and capacities of pupils; fourth, to reveal to them, by material otherwise justifiable, the possibilities in the major fields of learning; and, fifth, to start each pupil on the career which, as a result of the exploratory courses, he, his parents, and the school are convinced is most likely to be of profit to him and to the State. When these ends have been accomplished, the law may release pupils from compulsory attendance at regular day schools; sufficient information has been gained to make the election of future study not only intelligent, but also attractive, and each type of higher school or curriculum will receive the pupils for which it was established.<sup>2</sup>

**Koos's analysis of functions.** The second statement of functions is the result of an analysis, carried out by Koos, of a number of articles in educational periodicals by secondary-school leaders, and containing expositions of the purposes of the junior high school as their authors conceived them. Koos also included in his analysis a number of public-school documents, such as pamphlets describing the junior high school, written usually by the superintendent of schools or by the junior-high-school principal. A collective opinion of purposes is thus represented by Koos's statement.

<sup>2</sup> Briggs, T. H. *The Junior High School* (1920), p. 26.

- I. Realizing a democratic school system through:
  - A. Retention of pupils
  - B. Economy of time
  - C. Recognition of individual differences
  - D. Exploration for guidance
  - E. Vocational education
- II. Recognizing the nature of the child
- III. Providing conditions for better teaching
- IV. Securing better scholarship
- V. Improving the disciplinary situation and socializing opportunities.<sup>3</sup>

**An evaluation of functions.** The functions here ascribed to the junior high school are, on the whole, similar to those given by Briggs and Koos, although differences exist in arrangement, and probably also in relative emphasis. They are: (1) to reorganize the curriculum; (2) to take account of the problem of individual differences; (3) to meet the problem of elimination; (4) to adapt classroom methods and school organization to the period of early adolescence. These functions will now be described more completely.

*The curriculum.* A subject of study, or a topic within a subject, has almost invariably found its way into the curriculum because of social demands. As time goes on and as social demands change, the logical consequence would be to recognize new social demands by incorporating new subjects or new topics, displacing those which the demands of the times have outgrown. But this rarely results without a struggle, so strong is tradition in school practice. Materials of outworn social usage are likely to be tenaciously held, and when such is the case attempts are made, over and over again, to justify their presence on the grounds of

<sup>3</sup> Koos, L. V. *The Junior High School* (Harcourt, Brace & Co., 1920), p. 18. Koos's original table contains several other functions, but he regards those quoted above as most important.

mental training or discipline. Thus a curriculum becomes out-of-date. Thus also it becomes congested, for it yields to pressure for new topics and materials, and at the same time clings to the outworn.

As might be expected, this process has gone on in the elementary school. At no point, however, are matters worse than in the traditional subjects of the seventh and eighth grades. Much time is here spent in threshing over old straw, since the eighth grade was so long regarded as the stopping-place for instruction in the fundamental subjects and a final review was regarded as necessary.

However, socialization of subject-matter in the seventh and eighth grades is now being attacked with energy. Material justified wholly or for the most part only by traditional practice is being eliminated, and that which is retained is being tested in accordance with the principle of relative values. Subject-matter is being arranged in courses and curriculums enriched beyond those formerly found for pupils twelve to fifteen years of age. More flexibility is being introduced to suit individual needs, and topics and subjects are taught in accordance with the nature of the educand rather than at the dictation of the subject.

One of the duties which the junior high school will have to perform consists in carrying further the mastery of the fundamentals of education. A better command of English than can be acquired in the first six grades will be needed, both as a means of oral and written expression and as a tool of thought. Likewise, a wider acquaintance with literature and a more discriminating interest in reading are necessary. More mathematics will be required, for it can hardly be expected that sufficient mathematics will have been mastered to transact ordinary daily business. Increased knowledge of hygiene and the cultivation of habits of health are necessary. Likewise, the junior high school should meet ade-

quately the problem of wholesome and healthful enjoyment of leisure time.

Of paramount importance is the continuance of common, integrating education. Never before has the demand been so insistent for a wider acquaintance with civic problems and for participation in the affairs of community, State, and Nation. When it is remembered that boys and girls commonly end the junior high school only a year after the compulsory attendance law frees them from school, and that this unit of the school thus presents the last opportunity for exerting formal influence and education in civic matters, the need for carrying out a policy of integrating, assimilating education is more clearly seen. Such education is provided through those courses which pupils study in common, and through participation in those community and school affairs in which pupils naturally engage.

For those common needs and interests a score of subjects running throughout the junior-high-school period may be provided. When differences in ability or capacity predominate, pupils should be so classified as far as possible; when such classification is not possible (and it cannot even be attempted in many schools on account of limited enrollments) provision should be made within the class so that maximum effort may be exacted from, and greatest progress guaranteed to, every pupil. Experience now indicates that English, social studies, health education, mathematics, science, a modicum of industrial arts or home economics, music, and art should be required of all pupils in one or more of the junior-high-school years to provide for the needs common to all.

For those needs and interests found to be different, experience likewise indicates that electives should be provided from the fields of commerce, industry, agriculture, home-making, art, and the academic subjects. When



attempts are made to anticipate the future educational and vocational careers and destinations of pupils, school work can better be regulated. Of particular concern to junior-high-school administrators is that group of boys and girls who will end their formal education at the approximate age of sixteen years. For such, it is agreed that training applicable in earning a livelihood should be provided.

*Individual differences.* A recent contribution of educational theory, to which school practice is now striving to become adjusted, is the psychology of individual differences. So far-reaching are the implications of this principle that almost every problem in junior-high-school organization and administration is directly or indirectly connected.

If the elementary school is rightly conceived as the place where children gain the fundamental knowledge, skill, habits, and ideals of thought, feeling, and action which are necessary for all, no argument is needed to show that an undifferentiated curriculum is suited to their needs. Individual differences exist in the elementary school period, just as they exist in every other unit of the school system. There, however, differences are recognized through provision either for different rates of advancement or for a more or less widespread range of activities and an enriched curriculum. As children grow older, "vocational interests make their appeals with more marked response," and the economic influence becomes a more potent factor. Again, the limited length of time which can be given to formal education militates against devoting an excessive proportion of the school period to undifferentiated training. It is difficult, if not impossible, to single out a grade in which differentiated work should begin, but it is now the general view that under the old practice children are held too long under a curriculum that permits little adaptation to individual needs and interests, and that the wholly unified



work of the elementary school should come to a close by the time a pupil is approximately twelve or thirteen years of age. The basis of differentiation is found, however, in the varying needs of pupils due to the probable length of stay in school, and to probable educational and vocational careers, rather than to an absence of variability in mental and physical traits among children of the elementary grades.

Treatment of individual differences entails a diagnosis of individual needs, capacities, and interests as far as such diagnosis can be carried. As expressed by the Commission on the Reorganization of Secondary Education, emphasis in the junior period "should be placed upon the attempt to help the pupil to explore his own aptitudes, and to make at least provisional choice of the kinds of work to which he will devote himself."<sup>4</sup> Although the procedure in diagnosis is yet in the experimental stage, a large number of tests and devices have been worked out and are now in use in many quarters. These will be discussed later. Following closely upon diagnosis, and indeed almost inseparably entangled with it, come educational and vocational guidance. Under the proposed program every possible means will be employed to determine the needs, interests, and peculiar capacities of individual students, so that they may be directed as far as possible into those educational and vocational activities which seem commensurate with their own welfare and with the welfare of society.

*Elimination.* For many years it has been asserted that the "gap" between the elementary grades and the high school should be "bridged." The most important evidence of lack of articulation has been taken to be the high student mortality during the eighth and ninth grades, where a larger percentage of pupils, based upon the number enrolled in the grade, drops out than at any other point. Elimination

<sup>4</sup> *Bur. of Educ. Bull.* (1918), no. 35, p. 18.

begins, however, as early as the fourth and fifth grades, and great inroads are made upon the school population during the sixth and seventh grades. One of the major problems of secondary education lies in the determination of the causes of elimination, so that remedial measures may be taken. The junior high school is the area where the problem is most critical.

Undoubtedly, the character of the materials of instruction in the seventh and eighth grades has been an important cause of elimination. Therefore, a vitalized curriculum, which makes an appeal to the interests of boys and girls upon the grounds of use, should assist materially in overcoming elimination during these grades. A socialized curriculum, gradual introduction of departmental teaching, supervised study, and a student-advisory system are regarded as the chief agencies through which the break between the eighth and ninth grades will be eliminated.

*Adolescence.* Prior to the junior-high-school movement, certain writers justified the eight-four plan on the ground that the elementary period coincided with the stage of childhood, while the high school took pupils at the beginning of adolescence. It was argued that, since certain mental processes, notably memory and reasoning, experience abrupt changes at adolescence, high-school methods which stress abstract reasoning and logical memory were correctly formulated. In a word, justification was sought and found for the break in both subject-matter and in method occurring between the elementary and the high school on the grounds of the contributions of adolescent psychology.

A closer study makes it evident that no definite age can be assigned for the beginning of adolescence. The most reliable data show that, of a group of boys fourteen years and three months of age, nearly half have reached puberty, slightly more than one fourth are in the transitional stage,

and the remainder are physiologically immature. At the age of fifteen years and three months, seventy per cent are physiologically mature, twenty per cent pubescent, and the remainder pre-pubescent. Girls mature earlier than boys, so that at the age of fifteen eighty-five per cent have passed the pubertal period, while practically all of the remaining fifteen per cent are experiencing the process of change.

Age-grade distribution cannot be neglected when one is attempting to determine the school location of adolescent pupils. Approximately a third of all pupils in the first eight grades are one or more years behind the place they would be, had they entered school at the age of six, and had they progressed a grade a year. There are many boys and girls in the elementary grades who have already entered the adolescent period.

Taking into account the age at which boys and girls arrive at physiological maturity and age-grade distribution, it will be seen at once that it is impossible to select a grade before the tenth in which will be enrolled a group of pupils who are predominantly adolescent. It is likewise impossible to find a grade above the fourth which does not contain a considerable number of pupils physiologically mature. It will be found, however, that the majority of pupils (although not all) entering the seventh grade have reached puberty or are on the verge of transition, while the tenth grade will contain boys and girls who, in a great majority of cases (again not all), have become adolescents. Children are best separated into groups according to physiological development when six years are given to the elementary school, three years to the junior high school, and three years to the senior high school. The elementary school would thus contain pupils who are, predominantly, immature; the junior high school those who are, in the

majority of cases, maturing or mature; and the senior high school those who are, except in a few cases, mature.

Under the eight-four plan pupils were, admittedly, held too long under elementary-school methods. This statement holds, whether it is considered from the standpoint of the psychological development of children, or from the standpoint of preparation for high school. It is best considered, not from either of these points of view alone, but when they are both taken into account. Elementary methods should slowly be relaxed, and, to a corresponding degree, more freedom given. Pupils should learn to work independently, and their increased maturity and widening interests both permit and demand different subject matter and classroom treatment.

Considered either from the standpoint of the psychological development of pupils, or from the standpoint of their education for citizenship, it seems imperative that changes be made in the methods of student control which have existed in the past. One of the chief characteristics of adolescence is that it is the period when the individual strives actively to find his place in the social group. These efforts are naturally rudimentary during the early stages of adolescence, consequently they need much direction. Gradually the pupil should be accorded more responsibility, and gradually he should be given increased opportunity for participation as a group member in both the so-called curricular and extra-curricular activities. The fact that the pupil will later become a member of adult society calls for similar training. Years alone do not bring ability to associate with others — training is indispensable — and the natural place for the initial stages of this training certainly is the junior high school, if not the elementary grades.

## THE SENIOR HIGH SCHOOL

**Purpose of the senior high school.** If the viewpoint is taken that the junior high school, which constitutes the beginning of secondary education, is to explore vocational and educational aptitudes and interests, it follows that the senior high school, which completes secondary education, must make provision for a more or less complete training in the fields chosen as a result of the work in the junior high school. Differentiated curricula will be provided by means of which each pupil will be able to pursue, once his decision is reached, work systematically planned with reference to his needs as an individual and as a member of society. Such is the attitude of the Commission on the Reorganization of Secondary Education,<sup>5</sup> and it is a view that is shared by many who are actively engaged in administration. Such curricula will parallel the broad zones of human activity and will be arrived at through analyses of present and probable future demands of industrial, business, professional, and social life. On this point there can be no dissension, for, unless one places his hope in an extremely formal type of education, there is no other basis for differentiation.

*Flexibility of organization needed.* Extensive experimentation must take place, however, before we commit ourselves to a policy involving highly specialized senior-high-school curricula. In the first place, it cannot now be concluded that a final decision as regards vocational or academic career will be reached even in a majority of cases as a result of the explorative function of the junior high school. It is hoped that such will be the case, but we shall not know definitely that it will be the case until the program has been tried out more extensively than has yet been done.

In the second place, we are not certain of the type of

<sup>5</sup> *Bur. of Educ. Bull.* (1918), no. 35, pp. 18-19.

training which best fits a boy for successful pursuit of a given vocation. That he must possess certain more or less clearly defined skill if he is to fill a position as stenographer, clerk, or machinist is clearly evident; it does not follow, however, that the senior high school should be so organized that the acquisition of vocational skill is the primary consideration, even in a commercial or an industrial arts curriculum. Such qualities as industry, integrity, ability to coöperate and understanding of social and industrial problems seem to be as important as technical skill for success in vocational life. If such proves to be the case, it may turn out that the chief problem of the secondary school, as regards vocational training, is one of pre-vocational education and social and industrial intelligence.

Third, we do not know how much "general" education is needed. When curriculum-making has progressed to the place where we can specify with definiteness the mathematical ability, knowledge of civic institutions, health habits, and the like, needed by the average citizen, and when we have determined experimentally the most effective ways of teaching, we shall be better able to answer this question.

*Probable curricula.* Although it is unlikely that any one school will attempt all, the following curricula will probably constitute the main lines of work found in the senior high school: college preparatory; general; business or commercial; industrial arts; agriculture; home economics; special, such as music, art, etc.

Differentiation already exists within some of these special curricula. In large schools the college preparatory curriculum contains subdivisions providing preparation for entrance into liberal arts colleges, schools of engineering, etc.; the commercial provides for prospective salesmen, stenographers, buyers, or business managers; the agriculture



curriculum subdivides into grain-growing, dairying, fruit-growing, and livestock-raising divisions. How far the ramification can extend depends to a great extent upon the size and resources of the school; how far it should extend is not yet clear.

*The senior high school continues the functions of the junior high school.* The junior high school does not finally achieve the major purposes which have been ascribed to it, for, in a somewhat different form, they appear in the senior high school. The way the senior school meets one of these problems — the recognition of individual differences — is hinted at in the preceding paragraph. A need is evident for the reorganization of subject matter, for those subjects studied by all pupils have, in many cases, been insufficiently socialized or unified. The industrial, agricultural, home-economics, and commercial curricula are in the process of making. The problem of elimination is centered chiefly in the tenth year, where there is some disposition to provide curricula of one year in length. Much less student mortality is manifest during the eleventh and twelfth school years. In its extra-curricular activities, upon which much dependence is now placed for training in citizenship, the senior high school meets fairly well the interests and disposition of its students. Teaching methods, however, are in woeful need of improvement.

**Comprehensive vs. special-type high schools.** A comprehensive high school undertakes, through its differentiated curricula and its diverse lines of activity, to minister to the needs of all classes of students. It is by far the most common type — necessarily so, since the great majority of communities are able to support only one high school. Yet it is found in many of the larger centers of population, partly because these communities first established general high schools when their populations were too small to



warrant any other type, and partly because the general high school seemed to be the most desirable.

A special-type high school, as a rule, limits its work to one field. If more is attempted, it is quite likely to be closely associated with the original field. Special-type high schools are found in many of the large cities, where sufficiently large numbers of pupils are found to make up the student body of, for example, a high school of commerce. There are, in certain sections of the country, regional or county high schools which devote their energies to training boys and girls for some definite occupation. The agricultural high schools of the South are examples. The special-type high school has developed, according to Snedden,<sup>6</sup> in response to a public demand for vocational education. In his opinion, however, it does not realize the vocational end except in rare instances. It is rather a new form of general secondary education, with methods of instruction patterned closely after those of the general high school.

The comprehensive high school is favored by theorists in secondary education, while the special-type high school finds its supporters among those interested in vocational education. There is considerable contention as to whether vocational education of a secondary grade should be given in comprehensive high schools, or whether a system of special-type schools should be established. Unless regional vocational schools of secondary grade are established, as some advocate, the question is limited to the large cities.

A primary question is the efficiency of each of these schools in meeting the problem of vocational education. The special-type school can, without doubt, organize and plan its work much more effectively than that work can be handled in a comprehensive secondary school. However,

<sup>6</sup> In *Principles of Secondary Education*, edited by Paul Monroe (1914), p. 749.

it can make no provision for the student who finds himself wrongly placed, nor can the student enter another high school without great inconvenience and loss of time. It can be demonstrated convincingly that high schools, in common with other educational institutions, draw their patronage from their immediate neighborhoods. This means that many students will undertake training in one of the practical arts because of the nearness of the school, rather than because they are following their own interests and aptitudes.

The comprehensive high school may be organized to carry on the work of exploration and guidance, it is able to transfer the student from one curriculum to another in case a mistake has been made in choice of occupation, and it brings the various lines of vocational training close to the homes of the pupils. It needs the vocational subjects, for it is through the addition of these, in part or in whole, that much of the so-called vitalization of the curriculum will take place.

It should be stated that some who are interested in vocational education and formerly were inclined to regard the general high school as the natural place for specialized training in agriculture or the vocations, are now disposed to advocate a separate system of schools for vocational training. This change of attitude is due to the alleged incapacity of many public school superintendents and principals to deal with vocational education. Their own training was academic in nature, and in their experience as school administrators they have dealt almost entirely with academic education. Hence they fail to conceive properly the function of vocational education, and are more insistent that a boy who is enrolled in Smith-Hughes agriculture do good work in English or science than that he shall carry to successful completion a project in fruit growing or poultry

raising. It must be admitted that considerable justification exists for this complaint. School administrators should set themselves to a serious study of the vocational program.

Finally, it is urged by those favorably inclined toward the comprehensive high school, that social stratification and class consciousness will be stimulated if pupils are enrolled in schools according to the occupations they propose to follow. The comprehensive high school, on the other hand, should overcome this difficulty.

When administered by a principal who himself recognizes the social value of all types of secondary education and inspires a broad spirit of democracy among teachers and pupils, the comprehensive high school is a better instrument for unification. Through friendships formed with pupils pursuing other curriculums and having vocational and educational goals widely different from their own, the pupils realize that the interests which they hold in common with others are, after all, far more important than the differences that would tend to make them antagonistic to others. Through school assemblies and organizations they acquire common ideas. Through group activities they secure training in coöperation. Through loyalty to a school which includes many groups they are prepared for loyalty to State and Nation. In short, the comprehensive school is the prototype of a democracy in which various groups must have a degree of self-consciousness as groups and yet be federated into a larger whole through the recognition of common interests and ideals. Life in such a school is a natural and valuable preparation for life in a democracy.<sup>7</sup>

**Part-time schools.** For a number of years there has been a pronounced disposition on the part of school officials to provide training for those boys and girls who are eliminated during the seventh and eighth grades. Continuation and coöperative schools have, therefore, been encouraged. These schools are of particular concern to those interested in secondary education, for they include boys and girls of secondary-school age and they offer an oppor-

<sup>7</sup> *Bur. of Educ. Bull.* (1918), no. 35, pp. 25-26.

tunity for vocational education and for the continuance of general education.

*The continuation school.* The commonest time allotments for the continuation school are four and eight hours per week for a period of two or four years, or until the sixteenth or eighteenth birthday is reached. Instruction is given during working hours, and centers upon the vocation of the pupil or upon one for which he desires training. General education, in which stress is placed upon English and citizenship studies, consumes a portion of the time. A total of eighteen States had, up to 1920, enacted legislation providing for part-time education. Ten of these States passed their laws during 1919, and five during 1920, which gives an idea of the recency of the movement in the country as a whole. In eight States the compulsory period extends from 14 to 16; in eight, from 14 to 18.

*The coöperative school.* In the coöperative school the pupil divides his time between the shop or store and the school. Usually a plan is worked out where pairs of workers alternate, one having a week or more in school while the other is at work. School and shop work are closely related, so that one contributes to the other. A special officer, called the coördinator, is provided to see that this relationship is carried out and that instruction and progress in the shop are satisfactory. For coöperative schools to be successful, an agreement must be reached between school and employer. The demands of industry must not be allowed to overbalance the demands for vocational training; on the other hand, the employer cannot be expected to lose by the arrangement.

*Evening schools.* Many of the larger cities have provided evening schools. These usually enroll adults, since it has been found that young persons under eighteen years of age should not attend night schools on account of

the element of fatigue. Much of the time was formerly consumed in giving instruction in English to foreign-born persons or in teaching the fundamental subjects to those who have had poor educational advantages. But little industrial training was given. Of late years, however, there has been a strong tendency to increase it, particularly since federal funds are now available for this purpose. Many evening high schools offer work comparable to that found in the secondary schools, or even in the colleges.

*Federal aid.* Since 1917, the state and federal governments have encouraged vocational education through granting local districts certain funds. In return, they ask a part in directing the work. Practically all public vocational schools of a secondary grade have complied with state and federal regulations, and are receiving financial assistance. As yet, however, the whole movement for part-time education has hardly passed through its initial stages. In 1923 only 254,000 students of all ages were enrolled in federally aided part-time schools. This number represents less than ten per cent of the boys and girls fourteen to seventeen years of age not in school.

*All-day vocational schools.* Federal aid is also extended to all-day vocational schools of a secondary grade, the primary purpose of which is to train young people for gainful occupation. A discussion of the curriculum, organization, and administration of these schools cannot be attempted here, even though a large proportion of their pupils are of secondary-school age. In 1923 all-day vocational schools receiving federal aid numbered 3132. Of these 2165 were agricultural schools; 241, trade and industrial; and 726, home economics. Evening and part-time schools numbered 2515.<sup>8</sup>

<sup>8</sup> Federal Board for Vocational Education, *Yearbook* (1923), p. 31.

## THE EXTENT OF SECONDARY EDUCATION

**Number and size of high schools.**<sup>9</sup> In 1924, the Bureau of Education had records showing the existence of 19,442 public high schools. In addition to these, there are some 2500 private secondary schools. High schools vary in size from those of half a dozen pupils to those enrolling several thousand. Three fifths of the public high schools enroll 100 or fewer pupils. On the other hand, some ten per cent of the schools enroll more than 500 pupils each, and about five per cent register more than 1000 each. These facts are set forth in Table 2.

As one might expect, the large high schools enroll a large proportion of secondary students. The city high schools, averaging in enrollment 653 students, constitute less than a tenth of the total number of high schools, yet they enroll more than half the total number of students. The rural high schools, comprising 85 per cent of all, have an average enrollment of 59, and contain 40 per cent of the entire number of students.

TABLE 2. SIZE OF HIGH-SCHOOL ENROLLMENTS<sup>10</sup>

NUMBER	PER CENT	ENROLLMENT
5110	34	50 or fewer
4040	27	51-100
2618	18	101-200
1728	11	201-500
717	5	501-1000
601	4	1000-5000
13	1*	over 5,000

\* Less than one per cent

<sup>9</sup> Figures reported by F. M. Phillips, statistician in the Bureau of Education, *Bur. of Educ. Bull.* (1925), no. 40. See also *Bur. of Educ. Bull.* (1920), no. 11, pp. 15 ff.; Bonner, H. R., *School Life* (1920), 5:3. In 1924 the largest high school in the country had an enrollment of 8410. In the *Report of the Classical Investigation* (Part 1, 1924, p. 20) the number of secondary schools in the United States was placed at 20,500, of which 2500 were private.

<sup>10</sup> *Bur. of Educ. Bull.* (1925), no. 40, p. 2.



TABLE 3. POPULATIONS OF CITIES SUPPORTING HIGH SCHOOLS<sup>11</sup>

POPULATION	HIGH SCHOOLS		HIGH SCHOOL GRADUATES	
	Number	Per Cent	Number	Per Cent
100,000 up.....	311	2.5	63,543	22.3
30,000-100,000.....	219	1.7	30,923	10.9
2,500-30,000.....	1,984	16.2	86,391	30.3
Less than 2,500.....	9,781	79.6	103,817	36.5
Total.....	12,295	100.0	284,646	100.0

**Number of secondary-school pupils.**<sup>12</sup> According to the combined figures of enrollment from the state departments of education, 3,407,801 boys and girls were, in 1924, attending the public high schools in this country. In addition, 226,000 were in attendance upon private secondary schools, and 300,000 more were enrolled in private commercial and business schools. Another 100,000 were attending the preparatory departments of normal schools, colleges, and universities. Public secondary-school teachers numbered (1924) nearly 134,000, of whom 63 per cent were women. A total of about 362,236 pupils, of whom 57 per cent were girls, were graduated in 1924. This is more than ten times the number of graduates in 1890:

*Growth of high schools.* The magnitude of the public high school as an institution is better comprehended by indicating the growth that has taken place during the last thirty years. From 1890 to 1922 the total high-school enrollment increased over 600 per cent, while the total population of the country increased 74 per cent. During the same

<sup>11</sup> Compiled from data given in *Bur. of Educ. Bull.* (1924), no. 7, pp. 29-37.

<sup>12</sup> Data from *Bur. of Educ. Bull.* (1920), no. 11; (1920), no. 19; (1922), no. 29; (1924), no. 7; (1924), no. 38; (1925), no. 40.



period public high schools grew to four and one half times the number in existence in 1890. A more adequate grasp of the last statement is gained when it is stated that this means the establishment of a new high school a day for more than thirty years.

Another way of demonstrating the growth of secondary education is by showing the percentage of the total school population enrolled in the high schools at different periods. In 1870, 1.2 per cent of the total school population was found in high school. This ratio gradually increased to 6.7 per cent in 1915. In 1890, 3.2 persons in each 1000 of the population were enrolled in public high schools; in 1918, the number had increased to 15.6 per cent, or almost five times as great a proportion.

*Reasons for growth.* The reasons for the great growth of secondary schools and of the number of pupils attending them are both numerous and difficult of analysis. Here it will be pointed out merely that the American people have great faith in the value of a high-school education, and that the increasing wealth of the Nation has made it possible for larger and larger percentages of its young people to postpone the time of entrance upon gainful occupation. Belief in the value of an education is manifested, not only by the growth of secondary education, but also by changes in compulsory school attendance laws, under which many pupils must now remain in school until approximately the end of the ninth grade, and under the supervision of the school even longer. The total result is an increase in the amount of education received by the average citizen. These two items — compulsory school attendance and the amount of education received by the average citizen — merit further consideration.

**Compulsory school attendance.** In general, children are permitted to attend school between the ages of six and

twenty-one, and compelled to attend between the ages of seven or eight and fourteen. In most States they are also required to attend school from fourteen to sixteen years of age, or to secure labor permits. The growing tendency is to require full-term attendance, to hold children in school whether or not they have attained some educational standard, and to require continuous attendance. No disposition is manifest to decrease the amount of time spent in compulsory attendance upon school; on the contrary, there is considerable agitation to compel longer attendance. The general attitude of the country is, perhaps, well expressed by the recently proposed amendment to the Federal Constitution, which would give Congress power to regulate conditions under which children work prior to the age of eighteen.

Although ground has been gained in the last few years, fair-mindedness will compel the statement that, on the whole, compulsory school attendance laws lack vigor. They are also laxly enforced. This, coupled with inability to secure teachers, and legal restrictions placed upon the rate of taxation so that insufficient funds are available, sometimes makes it impossible to maintain the minimum school term provided by law.

*Children not in school.* Figure 1 shows, according to the 1920 Census, the number of children of each age not in school. It will be noticed that up to and including the age of fourteen, the vast majority are in attendance; at fifteen, however, a break occurs which grows more and more rapidly with each succeeding age group.

*Needed legislation.* In some States a gap exists between the time when children are no longer required to attend school and the age at which they are permitted by law to enter industry. Legislation is needed to prohibit boys and girls who have reached the age limit from dropping out of school and becoming idlers and delinquents. An example

of such legislation is found in the law passed in 1921 by the Ohio legislature. Its provisions are that boys and girls between sixteen and eighteen years of age may go to work if they have completed the seventh grade, have passed a physical examination, and can present a written promise

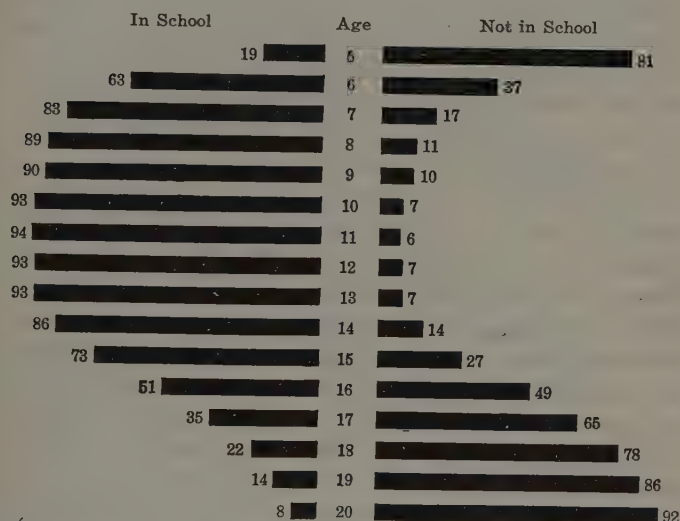


FIGURE 1. BOYS AND GIRLS IN SCHOOL AND NOT IN SCHOOL, 1920

Figures show per cents. (*Fourteenth Census, 1920, vol. 2, p. 1070.*)

of employment. A certificate is issued which is a release from school only for the time the child is employed. If he changes his employer a new certificate must be issued, and if he is to work for his parent the procedure is the same as if he were to work for another. If he is not employed, he must attend school. Attendance upon school is required until the age of sixteen under any condition, and the school thus keeps check of the boy or girl until the age of eighteen.

The amount of education received by the average citizen. A method which may be used in estimating the amount of

education received by the average citizen consists of taking, for a period of years, the number of persons six to sixteen years of age, the enrollment during the same interval for each of the grades, and of determining the relationship which exists between the two. For example, it will be seen from Figure 1 that about half of the sixteen-year-olds of the country were in school in 1920. If school progress were at a rate of a grade a year, nearly half the sixteen-year-old group would thus reach the tenth grade. Certain allowances must, however, be made for retardation and for irregular attendance.

On this basis, Byrne estimates that the average educational attainment for the present generation of school children is something beyond the eighth grade. More than 90 per cent reach the sixth grade, and about 36 per cent receive some high-school education. The average educational attainment for the present out-of-school population is beyond the eighth grade, and at least half of the parents of the present generation of school children gained an eighth-grade education. About a fifth of the present adult population, and about a tenth of the parents of boys and girls now attending school, received some high-school education. Fifty years ago, 5 per cent of the people secured some high-school education as compared with 35 per cent at the present time; 3 per cent then finished half of the high-school course as compared with 24 per cent; 1 per cent had then had four years of high-school work, while 14 per cent now receive that amount. A larger proportion of the total population now receives a college education than received a high-school education in 1870.<sup>13</sup>

<sup>13</sup> Byrne, L. *Sch. and Soc.* (1922), 15: 289-92; 327-31. The Bureau of Education places the schooling of the average man at 6.64 years. F. E. Spaulding asserted, during the World War, that "we are a nation of sixth-graders." See the *Atlantic Monthly* (1920), 125: 528-38.

**Change in character of secondary population.** Statistics showing the growth of the secondary school form the basis for the statement so frequently met that the interests, aptitudes, capacities, and future occupational destinations of the present body of high-school students are much more diverse than those of twenty-five years ago. Additional evidence supportive of this statement is found in the comparative numbers of high-school graduates entering college. While the total number has enormously increased, various statistical studies show that approximately thirty per cent of high-school graduates now continue their education in a collegiate institution, as compared with a much larger per cent thirty years ago. Within this period the secondary schools have extended and differentiated their program of studies, so that training corresponding to the broad industrial fields is offered. A similar development has occurred in the colleges. Within this period, also, many specialized schools have sprung up, to which high-school graduates go for training in specific vocations.

In all probability, the high school to-day does not select its students as rigidly as formerly. It is reasonable to suppose that thirty years ago the high school attracted a larger proportion of students who were interested in an academic education and were able to profit by it. Aside from general experience and observation, about the only information we have on this question was contributed by a recent investigation of Thorndike.<sup>14</sup> He estimated that 70 per cent of all high-school pupils then came from the highest fifth of human intelligence; to-day, the figure has dropped to 45 per cent. To make the comparison in another way, if forty human beings out of one hundred possess sufficient intellect to profit by the study of algebra, only 2.5 per cent of the pupils enrolled in the high schools

<sup>14</sup> Thorndike, E. L. *Sch. Rev.* (1922), 30:355-59.

of thirty years ago would be unable to profit by the study of algebra, while to-day the figure would be 10 per cent. Thorndike used algebra for his comparison, because subject-matter and methods of teaching that subject have remained the same or nearly the same. The facts, however, concern teachers of English, history, languages, or science as much as teachers of algebra.

For years we have worked on the theory that the secondary school should attract and hold the largest possible number of students. We have had the conviction that all young people of high-school age should be enrolled in the schools. In pursuance of this policy, condemnation has been meted out to the system of secondary education in general, or to a single school in particular, for failure to check elimination. The wisdom of this policy is not here questioned; the query is made, however, whether or not results can be otherwise than a gradual lowering of standards. As one writer expresses it, "in our eagerness to make secondary education universal, in our desire to appeal to all varieties of interests and all grades of ability, in our over-emphasis of the value of spontaneity as a dynamic force in learning, we have neglected to emphasize high standards and rigorous requirements."<sup>15</sup> Certainly it seems that many pupils lack a compelling motive for attending school, and that hard work is not always a necessity for graduation.

**Uniformity in high-school organization.** Until the junior-high-school movement began, great similarity existed among secondary schools, especially those north of the Mason and Dixon line and west of the Mississippi. Except in the South, where seven grades were found in the elementary school, and in certain New England centers where

<sup>15</sup> From Colvin, S. S. *An Introduction to High-School Teaching* (1917), p. 59. Reprinted by permission of The Macmillan Company, publishers.



nine grades were maintained, school organization has included eight elementary and four high-school years. High schools have had the same organization, and they have contained similar programs of study. Their differences have consisted chiefly in preparation demanded of teachers and in standards of scholarship. For example, courses in algebra or physics covered almost identical topics, and were often based upon the same textbook, whether taught in a high school in Maine or California.

To-day considerable irregularity exists, due to the introduction of the junior high school. When reorganization is finally accomplished, it is probable that the secondary schools of the country will be established upon the same general plan, with variations occurring through adaptation of the school to its immediate locality.

**Future growth.** How long the rapid growth of the secondary and the college population will continue, it is impossible to forecast. In Figure 2 the curve for secondary-school enrollment shows no pronounced break since 1908. If our goal is education for every normal boy and girl until the age of eighteen, our task is as yet far from complete, for in 1920 there were 1,475,000 fifteen- and sixteen-year-olds not in school. Seventeen- and eighteen-year-olds not in school numbered 2,709,000 — nearly as many as were enrolled in all public secondary schools. And as the high-school enrollment increases, the college enrollment will also increase.

The high school supplanted the academy because of the conviction that secondary education should be free and accessible to all. To-day that purpose has for the most part been achieved. The system has been so extended as to place the institution in most communities. In agricultural regions with sparse populations, arrangements have been made in most States so that boys and girls may attend



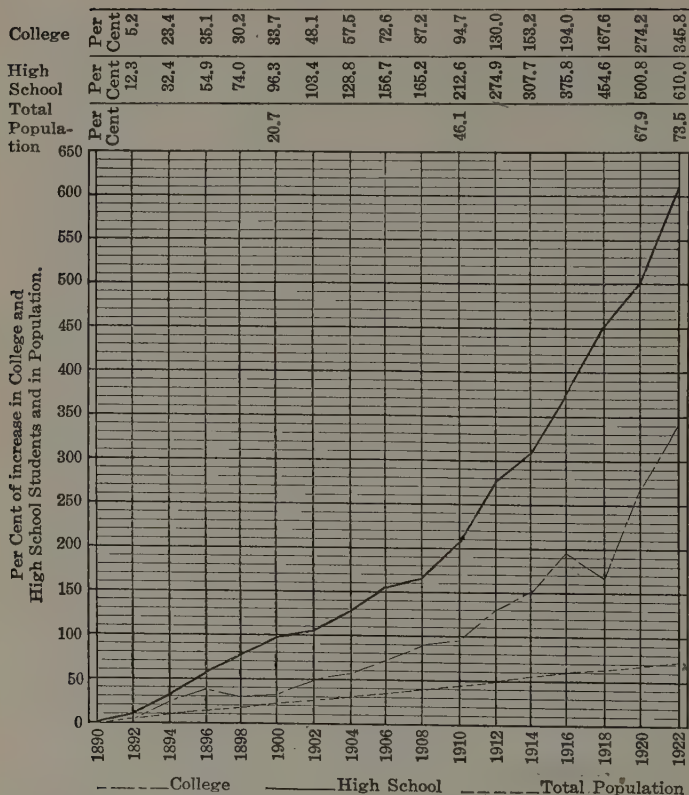


FIGURE 2. PERCENTAGES SHOWING THE COMPARATIVE RATES OF INCREASE IN THE TOTAL POPULATION, THE TOTAL ENROLLMENT IN PUBLIC AND PRIVATE HIGH SCHOOLS AND PREPARATORY DEPARTMENTS OF UNIVERSITIES AND COLLEGES, AND THE TOTAL NUMBER OF STUDENTS (EXCLUDING PREPARATORY STUDENTS) IN UNIVERSITIES, COLLEGES AND PROFESSIONAL SCHOOLS, FROM 1890 TO 1922

(*Bur. of Educ. Bull.*, 1924, no. 7, p. 5.)

neighboring schools, their home districts or the State bearing a large part, if not all, the expense of instruction. It is a fact even yet, however, that because of distance and

because of other reasons, many young people have even yet little or no chance to attend high school. Our next big problem in high-school administration is so to adjust subject-matter and so to modify methods of teaching that every boy and girl can have instruction suited to his capacities, interests, and probable future vocational destination.

America is justly proud of her secondary schools. In no other nation is anything like so great a number of young people or so great a proportion of the total population reached. We have grown so accustomed to the situation that we are likely to forget that none is excluded because his parents belong to a certain race or social stratum — a condition existing only in America. Censure of the high school would often be tempered if critics took into account its unparalleled growth. Superintendents have been confronted with immediate and pressing problems of administration, which have had to be met if their schools were to go on. They have had to establish new schools, see that new buildings were provided, and that sufficient funds were available to maintain the schools. For example, during the incumbency of twenty-one years of a superintendent of a Western city, the high schools increased in number from one to eight, and the students from 1000 to 16,000. Again, many new teachers have been recruited each year to take charge of the classes. Aside from the temporary nature of teaching as a vocation, this in itself would delay the professionalization of secondary-school teachers, and it has hindered the improvement of teaching under supervision. Even so, the training of teachers, both academic and professional, has constantly been improved.

We should not, however, assume an attitude of smug complacency with regard to our accomplishments. Many faults should be corrected, and even reforms are needed. A good omen for the future is the amount of study, dis-

cussion, and research concerning secondary problems now taking place. Scores of questions having to do with administration, teaching, subject-matter, measurement of results, vocation, and the like are under investigation by experimental methods. The effect upon the secondary school can hardly be other than beneficial.

#### SELECTED BIBLIOGRAPHY

See list at close of following chapter. Also see close of next chapter for Topics for Discussion and Investigation.

## CHAPTER III

### COLLEGIATE AND UNIVERSITY EDUCATION

**Introduction.** In this country the term "college" is used in a generic sense for all institutions of higher learning. It is otherwise used to specify a division or a school within a large institution offering many lines of work, or to distinguish undergraduate from graduate instruction. Again, it is applied to institutions which offer a "liberal" or a "cultural" curriculum, and which do not concern themselves with professional training of any kind.

An institution which is regarded as a university and is so entitled is organized into distinct divisions or schools, each of which gives training for one or more of the professions, or for business or higher technical pursuits. In Europe "university" is used to designate schools for professional and graduate study, and in the United States the word is often used with this meaning.

About a sixth of the total four-year high-school enrollment, and about half the graduates, continue their education. The majority enter a college or university. The colleges and universities have always exerted great influence upon the work of the secondary school, sometimes practically dictating the courses of study. In view of the above facts, it is incumbent upon the student of secondary education to familiarize himself with the purposes and organization of collegiate institutions. Considerable change is taking place in college and university organization which otherwise vitally affects the secondary school. The junior-college movement, in particular, may cause complete realignment in the senior high school through the proposed amalga-

mation of the last years of the secondary school and the first two years of the college.

### THE JUNIOR COLLEGE

**Definition of junior college, and extent of movement.**  
A junior college is an educational institution which supplies two years of training beyond the standard high school. Its curriculum thus corresponds to that of the first two years of an accredited college. As it exists to-day, a junior college may be either the first two years of a fully organized university, where the course is divided into two units of two years each, or it may be a separate institution. In the latter case it will in all probability be an upward extension of a high school, an independent institution offering two years of collegiate training, or a normal school whose work is closely articulated with the state university.

There are now upwards of 200 junior colleges in the country, established for the most part since 1912. They are located mostly in the Mid-West, West, and South. The Southern States contain the largest number of private colleges, while the Middle-Western States and the Western State of California have led in the development of public junior colleges. These institutions enrolled, in 1922, a total of about 16,000 students, more than half of whom were found in those designated as private.

Existing local conditions account for these differences in junior-college development. Missouri, where the private junior college has probably had its greatest development, contained a large number of private colleges with inadequate financial and student support. The heads of sixteen of these institutions believed<sup>1</sup> that they could do two years' work of a satisfactory nature, but not four. Hence they cut off the junior and senior years, and made arrangements

<sup>1</sup> Jones, J. C. *School Life* (1922), 8 : 89.

to send their students on to the University of Missouri or to other universities. In California, there are twenty-six public junior colleges.<sup>2</sup> California is a wealthy State, and it has been for a number of years a leader in secondary education. Detailed explanation is unnecessary to show that New England, with its large number of easily accessible colleges, would naturally be slow in the development of the junior college.

**The function of the junior college.** In order to determine the functions of the junior college, Koos<sup>3</sup> examined the most important articles upon the subject in the educational literature, as well as the catalogues published by a number of public and private institutions. From his analysis, and from other sources, it appears that the purposes of the junior college are regarded as follows:

1. To democratize higher education by making it more accessible to the general population. Many young people who now cannot afford to attend college would be able to do so if it were possible for them to remain at home; at the same time, home influence could be longer extended. The smaller enrollments of the junior college would permit greater attention to the individual needs of the students.

2. To effect a needed adjustment in the organization of the school system. It should place in the secondary school the work that is appropriate to it, thus leaving the university free to fulfill its real purpose.

3. To offer two years of work in advance of the senior high school, should the student desire to continue his education. This work should be acceptable to the higher institutions in case the student desires to complete a liberal arts course; similarly, it should meet the pre-professional requirements of schools of law, medicine, etc.

4. To supply what may be termed semi-professional training. There is need of vocational training at a higher level than the present secondary school, and lower than the university. Such

<sup>2</sup> Proctor, W. M. *Sch. Rev.* (1923), 31 : 363-75.

<sup>3</sup> Koos, L. V. *The Junior College* (1924), pp. 14 ff.

training is inadequately provided for in the public school system, and the junior college is the logical institution to offer it. Private schools in auto-mechanics, business, etc., and the two-year course in pharmacy in state-supported institutions, illustrate the type of training needed.

The chief work actually done by the junior college consists of offering a two years' course similar to that found in the freshman and sophomore years of a liberal arts college. To some extent differentiation is found, so that a student may enroll in what might be called a pre-professional curriculum, preparatory to the more specialized work of the university. The merest beginnings only have been made in extending upward the specialized curricula of the senior high school, or, in other words, in offering training for the semi-professions.

**Forces retarding or stimulating junior-college development.** Some of the larger private colleges encourage the movement, some express neutrality, while others are opposed. Reasons for opposition are three in number: the suspicion of low standards in junior colleges; the tendency these new units will have to disrupt college tradition by breaking across the four-year period at its mid-point; and the inadequate supply of higher educational institutions in certain States. One can appreciate the anxiety engendered in the four-year liberal arts colleges by the proposition to set up institutions designed to attract more than half their students.

The objection to the junior college on the ground that it will break in two a four-year period of training does not seem to be well founded. In the first place, the tendency to regard the first two college years as general in nature is fairly widespread. In the typical college or university more differentiation is found beginning with the junior year, where opportunity is given for intensive and specialized



training. In the second place, from one quarter to one half of all college students, according to Koos's data, drop out before the beginning of the junior year. The proportions vary with the institution, as might be expected. Eastern colleges showed the greatest holding power, Mid-Western colleges the least, and Mid-Western universities fall between these. Transfers from one institution to another are, of course, frequent, and it is significant in this connection that such transfers show a decided trend of students away from the general training of the liberal arts college to the special training of the university.

*Small private colleges benefited.* Many of the smaller private colleges are actively supporting the movement. In 1915, there were in the United States approximately 600 colleges. Of this number, 328 had a working capital of less than \$50,000; 246 of less than \$30,000 and many less than \$10,000. More than half of the 600 colleges had preparatory departments, in which more than two thirds of the total number of students were enrolled.<sup>4</sup> The Commissioner of Education asserted that many of the colleges with lesser resources and fewer students should become junior colleges. To-day many such institutions regard the junior college as the solution of their difficulties, and are rapidly effecting this organization.

*Crowded conditions in collegiate institutions.* The strongest source of stimulation for the development of the junior college is found in the amazing growth of the larger colleges and universities. The population of the United States increased 68 per cent from 1890 to 1918, while during the same period the attendance at colleges and universities increased 139 per cent.<sup>5</sup> Since 1918 the proportionate increase

<sup>4</sup> Cited from the *Proceedings of the North Central Association* (1916), p. 154.

<sup>5</sup> Zook, G. F. *School Life* (1921), 6:17.

of college and university students has been even greater. This topic is discussed in more detail later on in this chapter.

Such stupendous growth raises innumerable problems in college administration, the principal one being how to handle the large groups of students. It has not been possible in many institutions, on account of lack of funds, to increase the number of classes so that the number of students per class might remain the same as before the influx occurred. Classes of several hundred are not uncommon. In some institutions the number of students that can be accommodated is reckoned, and that number is selected from those applying for admission. The policy of exclusion raises protests, though, for it is held to be out of accord with the democratic principle of equal opportunity for all.

The condition cannot continue, for it has already become almost intolerable. If junior colleges were located in those areas which send large numbers of students to collegiate institutions, crowded conditions would be alleviated. The universities would be relieved of their great burden of caring for underclassmen, and could devote their time and attention to their real work, namely, that of giving specialized training.

### THE UNIVERSITY

**The purpose of the university.** Using the same method he employed in investigating the purpose of the junior college and the junior high school, Koos<sup>6</sup> found the function of the university to be to foster research, to give professional training, and to spread knowledge. A number of other purposes were also found, but they were not so important, at least if frequency of mention is a criterion of importance, as the three just cited.

These purposes agree with those advanced by the Com-

<sup>6</sup> Koos, L. V. *The Junior College* (1924), p. 369.

mittee on the Economy of Time in Education, whose report represents the culmination of the work of a number of National Education Association Committees, beginning with 1900.<sup>7</sup> In this report the assertion is made that this country should adopt either the English or the German type of university, but not both. In Germany, the student enters the university normally at the age of eighteen or nineteen, where he remains three or four years and takes up specialized training in his chosen field. The committee is of the opinion that the university, meaning the graduate school, and the "last two years of college should be shaken together and reorganized into one division of education, namely, a real university, preparation for which should end at 20." The following time scheme was suggested by the committee: elementary education, 6-12 years; secondary education (two divisions—four years and two years), 12-18; college, 18-20 or 16-20; university (graduate and professional schools), 20-24.

**Factors contributing to the above conception of a university.** The reasons for the new alignment of years recommended by the Committee on the Economy of Time in Education, will be better understood if some of the phases in the development of collegiate and university education in this country are examined.

*Nature of first two years of collegiate work.* The conviction exists in many quarters, and has existed for more than thirty years, that from forty to sixty per cent of the work carried on during the first two years in American colleges and universities is really of secondary character. In other words, work which represents final acquisition of fundamental subjects, and work which is preparatory in character, belongs to the secondary school rather than to the university. In illustration of the former type of work

<sup>7</sup> *Bur. of Educ. Bull.* (1913), no. 38.

may be mentioned the courses in English composition and English literature, which are required during the freshman and sophomore years in the majority of the higher educational institutions. While somewhat more exacting and extensive, little if anything is introduced which could not be taught in a secondary school. Courses in general chemistry and other basic sciences exemplify preparatory work which may well be assigned to the secondary school. Aside from these, it may easily be shown that the college encroaches upon the work of the secondary school through offering beginning courses in foreign languages, general courses in the social sciences, and the like. Thus the work of the first two years in American colleges and universities differs in purpose and content from the later years, where specialization in the professional, technical, and business occupations is undertaken.

*The advancing age of college freshmen.* From 1830 until approximately 1880 the average age for college freshmen showed a constant advance. This fact was noted by President Eliot in his Reports as President of Harvard College, and evidently it promoted his famous address given before the National Education Association, in 1888, entitled, "Can secondary education be shortened and enriched?"<sup>8</sup> This must have exerted considerable influence, also, on the origin of the Committee of Ten, whose Report (1893) exerted such a profound influence upon American secondary education. During this period college entrance requirements were greatly increased. More subjects were required, and the way in which these subjects were to be taught and studied was more specifically described. For years we have thought of fifteen units as the average college entrance requirement. This is practically twice the amount required at the close of the first quarter of the last century.

<sup>8</sup> Eliot, C. W. *Educational Reform* (1898), pp. 151-76.

*Adoption of the elective system.* Along with this change came the adoption of the elective system in the colleges. Since more preparatory work was done in the secondary schools, the colleges broke away from their rigid prescriptions and became more and more inclined to allow the student to choose his subjects. Out of the elective system emerged the major system, which allows both opportunity for, and requirement of, specialization. It is probable that, to-day, most college students elect the curriculum that corresponds to the occupation in which they expect later to engage.

*Junior divisions in universities.* The higher educational institutions in this country, and particularly those bearing the title of "university," have so organized their work that the student enters upon more specialized training beginning with his junior year. Many professional schools, existing alone or in connection with a university, require two or more years of college work for admission. The Universities of Chicago, California, Michigan, Minnesota, Stanford, Nebraska, and Washington have organized the first two years into a division to which "junior college" or an equivalent term is applied. The last two years in these institutions, which to all intents and purposes are under a real "university" organization, are similarly combined.

It is too early to tell definitely what effect all this will have upon the organization of secondary education. We shall return to the question again in Chapter VI, where the merits of the six-four-four plan will be discussed.

*Reorganization at Johns Hopkins University.* While many professional schools require two, and some four, years of collegiate training for admission, Johns Hopkins University has taken the lead in organizing along the lines sketched in the above paragraphs. In 1925, President Goodnow proposed certain changes (since adopted in that

institution), stating his conviction that the first two years of college are essentially secondary in character, and that to attempt to give such instruction to masses of somewhat immature students renders difficult, if not impossible, the best kind of advanced work. In the future, therefore, Johns Hopkins University will have no more freshmen and sophomore courses as ordinarily found in the colleges of the United States. Attention will be directed only to advanced work for which the University is equipped. Admission to this advanced work will be granted to students from junior colleges or to third-year liberal arts students. Degrees of Master or Doctor only, which will require three or four years' residence, will ordinarily be given.

**The liberal arts college.** Many of our higher institutions of learning are entitled "colleges," since they maintain only one general curriculum. It is intended that this curriculum shall include those subjects which, by virtue of their content, their practical value, or their value for mental discipline, are regarded as essential to a liberal education. Wide differences in practices exist with respect to required and elective subjects, as well as to the way in which vocational training is regarded. On the one extreme are those colleges which scrupulously avoid anything that pertains to vocation, for they believe their mission is to provide a cultural education; on the other extreme are those schools which are favorably disposed to vocational education, but are limited by their facilities and by small groups of students.

Almost without exception the liberal arts college is privately supported. Sources of income are endowments, gifts and bequests, and tuition fees. Many are partially supported by religious denominations; others not now affiliated with the churches formerly had such connections. The latter group are to all intents and purposes public in-



stitutions, and some of the larger ones are national in their influence.

**Normal schools and teachers' colleges.** Massachusetts passed a law authorizing the establishment of America's first normal schools in 1838. Except in certain Eastern States, the growth of these institutions was for twenty-five years very slow; since 1870, however, growth has been rapid. To-day the total number of normal schools is approximately 180, and they are found in all but six States.

The function of the normal school is to give professional training to prospective teachers. Its chief efforts have in the past been directed toward giving training to elementary and rural teachers. For many years the typical normal school had a four-year curriculum. The first two years were really secondary in character, and were attached because many of their students had not attended high school. As the high school spread and as qualifications for teachers were raised, only graduates from secondary schools were admitted. The first two years were dropped. However, a few schools have given agriculture and industrial arts, not only fitting their students to teach this work but also preparing them for the vocations. Some have given junior-college work, or have developed departments of music and fine arts.

There has always been divergence of opinion as to whether normal schools should confine their efforts to preparing teachers for rural and elementary schools, or whether they should also train high-school teachers. For more than twenty years efforts have been made to develop the normal school into a four-year teachers' college. The purpose of this reorganization, in the minds of the presidents of these institutions, is first of all to give to elementary teachers an adequate professional training. A four-year course leading to a degree would not only overcome a pronounced weak-



ness in our system of teacher training, but it should place elementary- and high-school teachers upon the same plane. Equal training and equal salaries should check the tendency for elementary teachers to regard high-school positions as superior to the ones they hold; they will thus remain in the division of the school for which they have been trained and in which they have gained experience. A second purpose, almost as important as the first, is to train high-school teachers. It is urged that the normal school or teachers' college is a specialized institution, designed for a special purpose, namely, that of training teachers. In this respect it is similar to professional schools of medicine, law, etc. Its purpose should be recognized in the same way that the purpose of other professional schools is recognized, and it should be given the same freedom of function. As a matter of fact, about three fourths of those taking degrees from teachers' colleges have become high-school teachers and only about a tenth have taken places in elementary schools.<sup>9</sup> The remainder have gone into other work.

On the other hand, many heads of divisions of education in universities are doubtful about the wisdom of the whole movement. Some actively oppose it. They would limit the function of the teachers' college to the preparation of elementary teachers, holding that the universities should continue to provide training for secondary teachers. In spite of opposition the movement has grown rapidly, especially since 1918. In 1923 about forty per cent of all normal schools had become teachers' colleges, and many predict that the time will come when all will be so organized.

**The city university.** A final trend in the development of

<sup>9</sup> Mosher, E. R. *The Rise and Organization of State Teachers' Colleges* (1923). Doctorate thesis, Graduate School of Education, Harvard University.

collegiate education should be mentioned. Within recent years the city university has sprung up. Generally speaking, it ministers to the educational needs of the city in the same way that the state university ministers to the educational needs of the State. The city university has had its

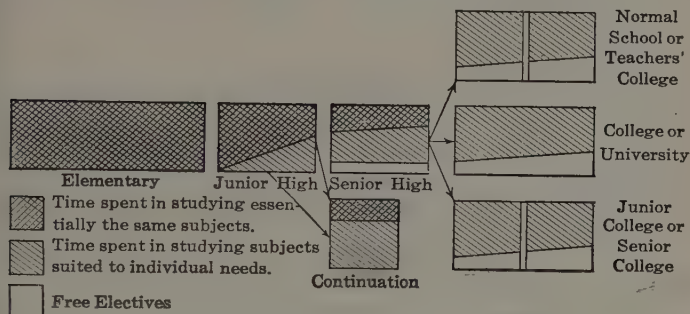


FIGURE 3. THE DIVISIONS OF THE PUBLIC SCHOOL SYSTEM AND THEIR PURPOSES

- I. Elementary education
  1. General mental and physical development
  2. Working habits and tools
  3. Socialization
  4. Introduction to culture of race
- II. Secondary education
  - A. Junior high school
    1. Provide for individual differences
      - a. Diagnosis and exploration
      - b. Educational and vocational guidance
    2. Reorganization of curriculum
      - a. Clearer statement of aims and objectives
      - b. Socialization of subject-matter
      - c. Recognition of new theory of transfer of training
    3. Adaptation to psychology of early adolescence
      - a. Recognition of psychology of learning
      - b. Recognition of physiological and social development
    4. Completion of unification and democratization of school system
      - a. Take account of elimination
      - b. Articulation with elementary and senior schools
  - B. Senior high school
    1. Continues the purposes of junior high school
    2. Training paralleling the broad zones of human activities
- III. Higher education
  1. Professional training
  2. Research
  3. Dispensation of higher learning

greatest development in the State of Ohio. In the opinion of some administrators, it is inevitable that the Government will undertake the duty of higher education in the cities as it has already done in the States. The junior college may then develop into the senior college, eliminate the freshman and sophomore years, and eventually become the city university.

#### COLLEGE ATTENDANCE

**Growth of colleges and universities.** Since 1890,<sup>10</sup> the growth in college and university enrollment has been 4.7 times as fast as the growth in the general population. In 1921-22 institutions to the number of 780, enrolling 618,555 students, employing 49,838 teachers, and having funds for their yearly expenses aggregating more than a quarter of a billion dollars, reported statistics to the United States Bureau of Education. Approximately half of the total number of higher educational institutions have enrollments of about 300 students. About 8 per cent have enrollments exceeding 2000.

Privately controlled colleges and universities comprise 85 per cent of the 780 reporting, and they enroll 64 per cent of the total number of students. Slightly more than a third of all college students are women. Private institutions contain a somewhat larger proportion of women than do the public institutions, although the difference is not great.

Tables 4 and 5 show how the students are distributed. Outstanding points are the large number enrolled in the collegiate or liberal arts department, and the amount of attention that is given to summer-school work and to correspondence and extension courses. The table does not show that there has been a gradual decline in the percentage of students enrolled in preparatory departments of colleges

<sup>10</sup> *Bur. of Educ. Bull.* (1924), no. 20, pp. 1-12.

— an inevitable consequence of the growth of the high school — nor that a gradual increase in students enrolled in college departments has occurred, especially since 1908.

TABLE 4. LOCATION OF COLLEGE STUDENTS BY DEPARTMENTS <sup>11</sup>

DEPARTMENT	MEN		WOMEN		TOTAL	
	Number	Per Cent of Total Enrollment of Men	Number	Per Cent of Total Enrollment of Women	Number	Per Cent of Total Enrollment
Preparatory.....	45,782	11	21,867	10	67,649	10
Collegiate.....	254,514	62	160,292	71	414,806	65
Graduate.....	15,046	4	7,970	4	23,016	4
Professional.....	70,618	17	5,064	2	75,682	12
Unclassified or special....	26,496	6	29,453	13	55,949	9
Total.....	412,456	100	224,646	100	637,102	100

Not included in table:

Summer School, 148,063.

Short Winter Courses, 5264.

Extension and Correspondence Courses, 114,444.

TABLE 5. DISTRIBUTION OF STUDENTS IN PROFESSIONAL SCHOOLS <sup>12</sup>

SCHOOL	NUMBER	PER CENT
Theology.....	8,430	6
Law.....	29,011	22
Medicine.....	17,522	13
Dentistry.....	11,790	9
Pharmacy.....	8,213	6
Veterinary Medicine.....	716	1*
Engineering.....	56,649	43
Total.....	132,331	100

\* Less than one per cent.

<sup>11</sup> *Bur. of Educ. Bull.* (1924), no. 20, pp. 1-7.

<sup>12</sup> *Ibid.*, p. 1.

Another fact not brought out by the table is that the enrollment of students in professional schools has fluctuated. They now comprise about 12 per cent of the total number, which is slightly less than the proportion enrolled from 1896 to 1910.

TABLE 6. GRADUATES FROM PUBLIC HIGH SCHOOLS CONTINUING THEIR EDUCATION

(by per cents) <sup>13</sup>

	1922			1923		
	Boys	Girls	Total	Boys	Girls	Total
To college.....	40	26	31	37	26	31
To other institutions.....	10	17	14	9	17	14
Total continuing their education.....	50	43	45	46	43	45
Total graduates.....	41	59	100	42	58	100

Reports were received in 1922 from 10,977 high schools with 243,648 graduates; in 1923 the number of schools reporting was 11,880, and the number of graduates was 321,077.

TABLE 7. NUMBER OF COLLEGE STUDENTS TO EACH 1000 SECONDARY PUPILS <sup>14</sup>

YEAR	COLLEGE, UNIVERSITY, PROFESSIONAL, AND NORMAL STUDENTS	ALL SECONDARY PUPILS	COLLEGE, UNIVERSITY, PROFESSIONAL, AND NORMAL STUDENTS TO EACH 1000 SECONDARY PUPILS
1890.....	156,756	357,813	435
1895.....	203,210	539,712	376
1900.....	237,592	695,903	341
1905.....	264,345	866,154	305
1910.....	355,215	1,111,393	320
1915.....	403,558	1,564,972	258
1920.....	597,857	2,494,676	239
1922.....	745,440	3,204,141	233

<sup>13</sup> *Bur. of Educ. Bull.* (1924), no. 7, p. 27; (1925), no. 40, p. 28.

<sup>14</sup> *Bur. of Educ. Bull.* (1924), no. 38, p. 5.

**Number of high-school students attending college.** Of 1000 pupils who enter public high schools, 725 reach the second year; 525 reach the third year; 449 the fourth year; and 418 graduate.<sup>15</sup> Of those who graduate, slightly less than half continue their education. About two thirds of those who continue their education enter a college or a university, while the remainder go to trade schools, normal schools, business schools, etc. (Table 6.) Although the number of girls graduating in 1922 or in 1923 is much larger than the number of boys, not so many entered collegiate institutions. Reducing the figures to percentages causes the difference to stand out more sharply: about 40 per cent of the boys go to college, while only 26 per cent of the girls attend. However, 17 per cent of the girls enter other institutions, as against 10 per cent of the boys. This difference is accounted for to a considerable degree by girls enrolling in normal schools.

From Table 7 it appears that the proportion of high-school students who have entered college has decreased remarkably since 1890. In that year 435 students were found in higher educational institutions for every 1000 high-school pupils. The proportion decreased somewhat rapidly until 1915; then more slowly until 1922.

#### TOPICS FOR DISCUSSION AND INVESTIGATION

1. Formulate, for sixth-grade pupils, a statement of accomplishment based upon the results of standardized educational tests.
2. Make a statement of abilities a high-school graduate should possess, similar to the one in Chapter II for sixth-grade pupils.
3. Procure the statement of purposes of a neighboring junior high school. Contrast with the statement of purposes in Chapter II.
4. Procure the statement of purposes of a neighboring senior high school. Contrast with the statement of purposes in Chapter II.
5. Describe the rapid promotion plans of the nineties and later. (See Holmes, W. H., in bibliography.)

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<sup>15</sup> *School Life* (1920), 5:3.



6. Describe the junior-college movement in your locality.
7. In your opinion, will principals of junior colleges favor amalgamation with the high school? Why or why not?
8. Outline the purposes and organization of the normal schools, or teachers' colleges, in your State.
9. Sketch the organization of your state university. Of your state agricultural and mechanical college.
10. Contrast the junior colleges of California with those of Missouri.
11. Describe a "special-type" high school of your acquaintance. In your opinion, do special-type high schools foster lines of social demarcation?
12. What is the function of a liberal arts college?

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## CHAPTER IV

### COLLEGE ENTRANCE REQUIREMENTS

**The necessity of selecting college students.** Colleges have always been centers for disseminating advanced knowledge. More recently they have become centers for research. There is every reason why society should continue to support them for these purposes. Since this is the case, it is agreed that college students must be selected because of superior intelligence and training. The chief question upon which there is divergence of opinion is the method of such selection. Within the last decade this problem has become more and more pressing because of mounting expense and because so many students have sought admission that a large number of higher educational institutions have, owing to insufficient facilities, been unable to admit many of their applicants.

**Origin of present entrance requirements.** In American colonial days a simple system of examinations was used to test a candidate's fitness for college. This consisted in some instances of a more or less informal oral examination and conference between the candidate and one or more representatives of the college. As the number of applicants for admission to college increased, such a method became impracticable, and a formal written examination was set. Until near the close of the last century practically every college selecting candidates set its own examination. The inconvenience of this method can readily be appreciated, especially in the case of the secondary-school pupil and the secondary school. Not only was attendance upon the examination made difficult, but the varying requirements

and the different standards existing among the colleges were extremely confusing. A number of proposals were made to alleviate this state of affairs, and the most important result of these proposals was the establishment in 1900 of the College Entrance Examination Board. It is still possible to enter any college by examination, and it is impossible for the majority of students to enter many colleges in any other way.

*The accrediting system.* The public state universities experienced a rapid growth subsequent to the Civil War. Since they have always been regarded as a part of the public school system, it was but natural for the conviction to spread that they should be articulated closely with the public high school, and that the students from the latter should pass with a minimum of inconvenience into the university. Michigan University is credited with being one of the first institutions to admit without examination students who graduated from secondary schools where instruction was approved by the authorities of the university. This occurred in 1871. Since that time the method of accrediting has spread widely, until it now exists in practically every state-supported institution of higher learning and in many privately supported colleges and universities.

**Required secondary-school preparation.** It should be explained that admission to many colleges and universities depends upon the subjects pursued in the secondary school. This statement holds whether admission is determined by examination or by some method of accrediting, and every college or university (and often every division or school within a college or university) has its own rules and regulations concerning the nature and quality of the preparatory-school work. It thus behooves the pupil to select not only the institution which later he expects to attend, but the specific division within that institution.

A certain amount of order and similarity does exist as regards the demands which higher educational institutions make upon the secondary schools. Generally speaking, 15 units are required for admission. A unit comprises about a fourth of a year's work or a time allotment of 120 sixty-minute hours, or the equivalent. In the past most high schools have met this requirement by scheduling a subject for the full year of not fewer than 180 days, and by arranging class periods of 40 or 45 minutes. Most colleges have their prescribed, accepted, and elective units. As these terms indicate, the higher institution reserves the right to specify a certain number of studies which candidates for admission must pursue for a certain length of time. They furnish a list of subjects from which a student may select a fraction of his work, and finally, they allow him to choose for another fraction of his work any subjects offered in the secondary school and accepted for graduation.

*Recommendations of the National Education Association Committee.* A committee of the National Education Association, appointed to consider the question of articulation of secondary schools and colleges in 1910, made recommendations concerning the nature and the amount of work acceptable for college entrance.<sup>1</sup> These recommendations have been very influential, and are as follows:

1. The quantitative requirement should be 15 units.
2. Every high-school course should include at least three units of English, one unit of social science (including history), and one unit of natural science.
3. Every high-school course should include the completion of two majors of three units each and one minor of two units, and one of the majors should be English.

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<sup>1</sup> *Bur. of Educ. Bull.* (1913), no. 7, pp. 97-105. C. H. Judd, who was a member of the committee, expressed himself as in sympathy with the general statement, but suggested that the requirements should not be in

4. The requirement in mathematics and in foreign languages should not exceed two units in mathematics and two units of one language other than English.

4. (a). In place of either two units of mathematics or two units of a foreign language, the substitution, under proper supervision, should be allowed of two units, consisting of a second unit of social science (including history) and a second unit of natural science.

5. Of the total 15 units, not less than 11 units should consist of English, foreign language, mathematics, social science (including history), natural science, or other work conducted by recitations and home study.

The other four units should be left as a margin to be used for additional academic work or for mechanic arts, household science, commercial work, and any other kind of work that the best interests of the student appear to require.

This plan is designed to insure flexibility, while at the same time it demands continuity and concentration on the part of the student. Choice is made in the following manner:

	A	B	C
English.....	3	3	3
Foreign language.....	2	2	0
Mathematics.....	2	0	2
Social Science.....	1	2	2
Natural Science.....	1	2	2

To be added to complete second major:

	$\frac{1}{10}$	or	$\frac{2}{11}$	$\frac{1}{10}$	$\frac{1}{10}$
Total.....	$\frac{1}{10}$	or	$\frac{2}{11}$	$\frac{1}{10}$	$\frac{1}{10}$

*College requirements in 1912.* In 1912, Kingsley found that the average number of prescribed units in 319 colleges was 10.2. Three units of English, two and a half units of mathematics, a unit of science, and a unit of social science were the most uniform requirements.<sup>2</sup> These were average requirements, and great differences existed from school to school. On the one extreme were those institutions which specific subjects. He favored two majors of three units and one minor of two units.

<sup>2</sup> Cited from Inglis, A. J. *Principles of Secondary Education* (1918), p. 321.

prescribed no units, but which accepted graduates of high schools accredited by the state department or some other agency. On the other extreme was the group of New England liberal arts colleges, which required four years of Latin in addition to three of English, three of mathematics, and one of social science. Candidates for the bachelor of science degree were often permitted to substitute a modern foreign language for Latin, and to offer one or more units of science.

*Changes in admission requirements.* Several comprehensive investigations of colleges of liberal arts, located in all parts of the United States, revealed certain trends during the decade following 1912:

1. There was a slowly growing tendency to offer two degrees, the A.B. and the B.S., in place of one, three, or four degrees.

2. Practically all colleges required three units of English and two units of mathematics. There was little change in the English requirement, although the tendency to accept four units increased. In mathematics there was a decided trend away from the  $2\frac{1}{2}$  unit requirement to a two unit requirement.

3. More changes occurred in the foreign language requirements than in all other entrance subjects combined. There was a decrease in the number of units required, more liberality with respect to the foreign language studied, a reduction in the requirement of two languages, and a marked growth in the number of degrees requiring no foreign language for entrance.

4. The requirement in social science, in force in three fourths of the 314 colleges, was one unit. More than half the colleges did not specify the science to be studied; when specification was made, ancient history, American history, and general history were mentioned most frequently and in this relative order. But little change took place in the social science requirement during the decade.

5. Few changes occurred in science requirements. About half the degrees required a single unit, ordinarily unspecified. When specification was made, it was most often physics. General science gained in recognition.

6. Commercial and vocational subjects, in spite of great opposition, were rapidly establishing themselves as acceptable units.



7. A large number of colleges had begun to require testimonials in regard to the candidate's moral character. Only a few made a requirement of physical fitness. A definite movement arose to admit only those students who stood in the upper part of the high-school graduating classes, or who had made better than passing marks.

8. There was a decided trend away from the requirement of the larger number of units toward the smaller. The decade also witnessed a pronounced movement toward abolishing entrance conditions. Colleges began a strict enforcement of their published entrance requirements. Liberality in granting conditions became unnecessary because of the increased number of students seeking admission.

9. Latin was more often required for the A.B. degree in the South, the Middle Atlantic States, and in New England than in the Middle West and the West.<sup>3</sup>

10. New England had, during the decade, made but minor changes in college entrance requirements. Colleges offering the A.B. degree had made small reductions in the number of prescribed units, and similar changes had occurred in colleges maintaining B.S. curricula. In both, most of the changes consisted in removing history and modern languages from the prescribed to the elective list.<sup>4</sup>

11. In general, the collegiate institutions of the East remained more rigid in their prescriptions, requiring more language, and specifying the language to be studied. Collegiate institutions in the West asked less, and did not specify the language to be studied. In the East science and history were not often required; in the West they were frequently required. Eastern schools gave little credit for the newer high-school subjects, and when credit was given the student was limited often to a single unit. Western colleges granted admission credit for practically any new subject, provided the student could at the same time meet the general admission requirements. These differences gave the western secondary schools a freer hand in experimentation, more leeway in exploring pupils' abilities and in making adjustments to individual differences, and greater opportunity to offer vocational work.<sup>5</sup>

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<sup>3</sup> Adapted from McKown, H. C. *Bur. of Educ. Bull.* (1924), no. 35.

<sup>4</sup> Black, M. S. *Educ. Admin. and Super.* (1919), 5:73-84.

<sup>5</sup> Koos, L. V. *Sch. Rev.* (1920), 28:673-81.

**The College Entrance Examination Board.** The original purpose of the College Entrance Examination Board was to set uniform examinations for candidates who sought admission to certain colleges. Its activities have not been so confined, however. Practically any college in the United States accepts the results of the Board's examinations, which are now held in all the States, in five territorial dependencies, and in 24 foreign countries. Candidates to the number of 19,775 presented themselves in 1925 for the examination. A total of 1961 secondary schools were represented, of which about half were private. For the period of 1924-25 a total of 340,602 answer books were turned in, 61.5 per cent of which received marks from 60 to 100. As an agency for college admission, the influence of the Board is felt most strongly in New England and in the Middle Atlantic States, for by far the largest number of pupils taking the examinations come from those sections. A large majority of the pupils likewise come from private schools.

Two methods of admission are employed. One is called the "Old Plan"; the other, the "New Plan." Entrance to college under the Old Plan is determined by the candidate's ability to pass formal, content examinations in certain subjects which must be acceptable to the college the candidate desires to enter. Due in part to the requirements of the colleges belonging to the association, the examinations of the College Entrance Examination Board are limited mostly to the academic subjects.

In 1916 a plan was adopted under which a candidate might substitute a "comprehensive" examination for the content examination. The thought behind the comprehensive examination was that the schools should be left free to teach in their own way, and that the college has the right to test the effectiveness of that teaching through

examinations requiring both knowledge and power or ability to use that knowledge. The candidate selects, within limits, the subjects in which he is to be examined. Under the New Plan, the comprehensive-examination record and the high-school record are considered. More flexibility is thus allowed in planning high-school programs.

The New Plan of admission has not proved as popular as the Old Plan. From 1920 until 1923 slightly more than 14 per cent of all candidates taking the examinations sought admission under the New Plan. This proportion dropped slightly in 1924 and 1925.

*The examination plan in practice.* It has already been remarked that the College Entrance Examination Board holds its examinations in many centers, and that they are taken annually by thousands of students. An elaborate plan of marking papers has been evolved. Papers are re-graded with a small amount of variation, but there has been in the past great differences in the percentages of students who fail from year to year. The Board has conducted experimentation to determine the value of the so-called "new type" examinations, and in 1926 began the practice of conducting psychological tests.

One major benefit results to the high schools from these examinations. Scholarship is raised. No matter what mark the pupil receives by hook or crook in his high-school mathematics, he must pass the entrance examination in mathematics. High-school principals themselves admit that the examinations are a good club to drive pupils to more thorough work. On the other hand, an examination system does not stimulate that cordial and intimate relationship between secondary schools and colleges as regards their common problems. It calls for no visitation or inspection of secondary schools on the part of the colleges, and there is no stimulus for discussions of teaching methods.

Still more serious is the effect the examinations have upon the high-school curriculum. The private secondary school, whose chief function is preparation for college, is not particularly concerned with this problem. But the public high school, which must take account in planning its program of studies of those young people who will not finish high school, of those who will finish high school but who will not enter college, and of those who will enter college by the accrediting system as well as those who will enter college by the examination system, has its work dictated in all too many cases by the examinations. The smaller the school the worse conditions become, for the large school can meet the situation by offering curricula whose purposes lie in some other direction.

*Do principals favor the examination system?* From a questionnaire returned by most of the New England high-school principals, it was found that ninety per cent favored a certificate plan, and that similar unanimity prevailed in the desire for more uniformity in requirements and a reasonably free margin of subjects. The principals testified that, especially in small high schools, the curriculum was dominated by the entrance requirements, and that these were in conflict with community interests. They felt that the needs of the community should take precedence. Only ten per cent of the pupils who entered high school actually reached the standard college, and only about a fourth of these attended colleges demanding entrance examinations.<sup>6</sup>

The way in which the examinations limit the high-school program of studies is clearly shown by the list of subjects in which examinations are given. In 1925 they were: English, history, civil government, Latin and Greek, modern foreign language, mathematics, science (physical geography

<sup>6</sup> Davis, J. B. *Sch. Rev.* (1923), 31:445-51.

included, general science excluded), and freehand and mechanical drawing.

The classroom teacher who has taught in a school where a considerable percentage of the graduates expect to take the examinations knows that his real or supposed success will be judged by the results of those examinations. An unsuccessful teacher is the first to be dismissed when a staff is selected for another year. Therefore, the teacher must teach with an eye single to the examinations. The process of socialization and vitalization of subject-matter is reduced, and drill upon what is likely to come up in the examinations is substituted.

**The accrediting system.** Under the accrediting system, a college agrees to accept for its freshman class such graduates of approved secondary schools as are recommended to it as properly prepared to do college work. The plan has various modifications in different states. The school as a whole is usually approved or disapproved, although accrediting may be by subject. The agencies commonly found for accrediting are set forth below:

Two methods are in common use for carrying on the system of accrediting in those States where the state authority embraces agencies for higher education. Under the first, inspection of the work of the high schools is done through an officer or committee of the state university, and the list of acceptable or accredited high schools is published in the catalogue of the university and thus made available for other institutions within the same State or for institutions in neighboring States. Under the second, the inspection and rating are done by the state superintendent of public instruction, the state board of education, or the state education office, acting through specially appointed officers.<sup>7</sup>

The North Central Association of Colleges and Secondary Schools is an excellent example of an accrediting agency designed for the mutual benefit of both collegiate and sec-

<sup>7</sup> *Bur. of Educ. Bull.* (1922), no. 11, p. 9.

ondary institutions. It includes most of the colleges and many of the high schools in its area, it maintains facilities for visitation, inspection, and accrediting, and it publishes in its proceedings lists of accredited schools and rules and regulations for accrediting. Within its area the matter of college entrance is greatly facilitated, for the graduate of any accredited high school, provided he has the necessary subject and scholarship qualifications, can enter any college accredited by the Association. Graduates from its accredited high schools also find the doors of colleges without the territory covered by the Association open to them, since high standards have always prevailed and the Association has come to be widely recognized.

Under a plan put in operation by the New England College Entrance Certificate Board, certain secondary schools may certify a number of students for admission to colleges in the association. Only those students are certified who have done a high grade of work in the secondary school, and even they may not always be certified in all subjects. Colleges watch closely the work of such students, and withdraw the privilege of certification from those high schools whose graduates do poorly in college. An admirable quality of students should be selected by this means; on the other hand, principals are so cautious in making recommendations that only a few are certified each year.

*The accrediting system in practice.* The high school has been hampered by the accrediting system, but it has also benefited greatly. The chief disadvantage suffered has been in the limitation of the curriculum. Although the admission requirements are very liberal when judged by those set up by the New England college of liberal arts, they have nevertheless been academic rather than practical, and colleges admitting solely by certificate have looked with favor upon English, foreign languages, mathematics,



physical science and social science. The major and minor system which has spread within the last ten years, together with disinclination to prescribe the content of the courses and the methods to be used in teaching it, has made for increased flexibility.

The quality of work done by the high school has been greatly improved through the requirements set up for accrediting. Better trained teachers, better buildings, and better equipment have all resulted. The contact established through accrediting has led to a common consideration on the part of public school men and college teachers of the problems of subject-matter and methods. It is true that formerly, more than now, subject-matter and methods were based on what the college demanded, whether or not they were suitable to the community or taught in a manner appropriate to the age and development of pupils. This was but natural, for as one surveys the situation it seems unmistakably true that school superintendents and principals were not capable of working out the system themselves. A large per cent of them to-day would be totally at sea were it not for the courses of study furnished by the colleges or state departments and the general direction they receive from these sources. Being under continuous pressure to reduce expenses, and taking the matter of academic and professional training no more seriously than they do (although they profess otherwise), their standards would go down if they were not held forcibly by requirements for accrediting.

**High-school marks and college scholarship.** Thorndike's investigation of the correspondence between college scholarship and marks received in College Board examinations was one of the first to question seriously the efficacy of the examinations.<sup>8</sup> He showed that a high average on

<sup>8</sup> Thorndike, E. L. *Educ. Rev.* (1906), 31: 470-83.



the examinations had little power to predict excellence in scholarship, and expressed the opinion that students of excellent promise were kept out of college by the examinations, while others incapable of doing college work were admitted.

Lincoln's investigation,<sup>9</sup> made at Harvard in 1917, took into account for the first time secondary-school record, examination record, and college record. His conclusions are in agreement with those of other investigators, namely, that "the quality of work done in high or preparatory school is better and more accurate than the grades received on entrance examinations as a means for determining the fitness for work in college."

Five years later Beatley<sup>10</sup> made a similar investigation. He found that

(1) the school record gives a somewhat better indication of the quality of work that men will do in college than does the record on the comprehensive examination. (2) The comprehensive examinations are superior to the Old Plan examinations in determining fitness for college. (3) The New Plan of admission is probably more effective than either the school record or the comprehensive-examination record alone, in indicating not only the candidate's ability to do college work but also the qualitative standard of his previous scholastic training.

Adherents of the College Entrance Examination Board system are not yet convinced. Their experience, they say, shows that little reliance can be placed upon a principal's recommendations. The principal retaliates by asserting that he hears no complaints about the student who has been admitted by examination, but that complaints invariably occur when a student who enters by the accrediting method fails. Examination Board officials, of course, do not ignore

<sup>9</sup> Lincoln, E. A. *Sch. and Soc.* (1917), 5:417-20.

<sup>10</sup> Beatley, B. *Sch. Rev.* (1922), 30:141-47.

the investigations cited above; they feel that they do not tell the whole story. For example, Wood<sup>11</sup> demonstrated statistically that, of 10,000 students who took Form 1 of the Board's examination in geometry, nearly a third would fail. Of those who failed, some two fifths would pass Form 2 of the examination, while an equal number of those who passed Form 1 would fail under Form 2. Wood's method was to use and correlate the scores made on the odd-numbered questions in the geometry examination with the scores made upon the even-numbered questions in the same examination, on the assumption that students should do equally well upon either half of the examination. In criticism of his results it was pointed out that a geometry examination cannot be so divided. An examination is an organic whole, whose symmetry is destroyed unless all questions are given their proper places. Ability in geometry can no more be predicted when half the questions are considered than the scoring power in field events can be predicted for a track team by what it can do in the track events.

*Relative scholarship as a supplement to accrediting.* Some schools which admit by the method of accrediting require a certain standard of scholarship in addition to prescribed subjects. Two methods may be employed in determining scholarship: one is to limit entrants to those who have stood high in comparison with their fellow students; the other is to ask that a certain percentile mark be earned in those subjects presented for admission. Any one who is at all conversant with the numerous investigations concerning the reliability of marks will at once be inclined to favor the first method. The value of a mark, of say 85 per cent, varies so much from teacher to teacher and from school to school

<sup>11</sup> Wood, B. D. *Measurement in Higher Education* (1923), pp. 124-31. College Entrance Examination Board, *Twenty-Second Annual Report* (1922), p. 18.

as to make it of uncertain value. Teachers are more successful in assigning pupils to groups in accordance with excellence in scholarship.

If, for example, a university requires a candidate to earn a grade of at least 80 per cent in the subjects which he presents for admission and if those who are below this mark are excluded, the result will be that some schools will be penalized and others favored. Small schools as a rule give a larger percentage of high marks than do large schools, and hence the large schools will be penalized.<sup>12</sup> A large proportion of high grades almost invariably means poor standards and superficial work, so that whether the school is large or small many capable students are refused admission while others are admitted who are of poor caliber.

**The use of intelligence tests.** Since 1918 a large number of colleges have been experimenting with intelligence tests. Many now require their freshmen to take an intelligence examination. As yet the results have been used to investigate their predictive value rather than as an added or substitute entrance requirement. At present no college excludes a student on account of poor performance upon the tests provided he meets the regular admission requirements. It is possible, in some instances, when the applicant does not measure up in some respect, to gain admission to college by means of an intelligence examination. At Columbia College, for example, a candidate may substitute the intelligence examination for the content entrance examinations if his secondary-school grades are at least as high as those required by the school for certification in the subjects required for admission, if he can present evidence of moral character, and if his health record is acceptable to the college medical inspectors.

The test of the reliability of the intelligence examination

<sup>12</sup> Emerson, D. A. *Sch. and Soc.* (1925), 21:54-56.

as an instrument for college admission is the relationship found between scores and college grades. MacPhail compiled a table in which he showed the coefficients of correlation derived by some 60 investigators. The central tendency of the correlations was from .40 to .45. A few fell below .30, and several went as high as .60. Over two thirds fell between .30 and .50.<sup>13</sup> There is thus a marked correlation between performance upon intelligence tests and quality of class work.<sup>14</sup>

When classification is made in accordance with an ascending series of scores, it is found that candidates making the lowest scores are the ones most likely to do unsuccessful college work. Wood found, for example, that 95 of every 100 men below 65 on the Thorndike examination would fail and be dismissed at Columbia College within two years. While there is no single score which can be taken as a dividing line, there is a "critical area." At Columbia, men between the limits of 65 and 75 are bad college risks, and should be admitted only if they present evidence of extraordinary character and industry, or if there are no better candidates who might be admitted.<sup>15</sup>

Correlation studies, examination of the work done by freshmen who have scored low upon an intelligence examination, and comparisons made with other admission requirements have led many investigators to the conclusion that a certain minimum intelligence is absolutely necessary for successful college work, and to the further conclusion that the intelligence test is the most reliable single instrument in selecting college students of quality. It may well be re-

<sup>13</sup> According to Rugg, in his *Statistical Methods Applied to Education*, a correlation is negligible when it is lower than .15 or .20; it is present but low when it is between .15 or .20 and .35 and .40, and is marked when it falls between .35 or .40 and .50 and .60.

<sup>14</sup> MacPhail, A. H. *The Intelligence of College Students* (1924), p. 28.

<sup>15</sup> Wood, B. D., *loc. cit.*, p. 68.

peated that none advocates use of the intelligence examination alone; there are many, however, who would use it in connection with entrance examinations or high-school records.

On the other hand, a high intelligence score is not a guarantee of satisfactory scholarship. Colvin found at Brown University that lack of determination, persistence, or will-to-do was even a more important cause of failure than lack of intelligence.<sup>16</sup> At the University of Michigan it was discovered that inferior intelligence was not at all common among some 600 students who had been placed upon probation for poor scholarship. The students themselves thought that the change from the high-school to college conditions, poor health, inadequate preparation and poor study habits, outside work, and rooming conditions unfavorable to study were the most important reasons for their failures.<sup>17</sup>

*The plan of the American Council on Education.* The American Council on Education has entered upon a program whose purpose is to make available to colleges and universities the most successful forms of psychological tests. "The program contemplates the publication of a comprehensive set of psychological tests every year and the annual revision of the tests in the light of experience with them in a representative group of colleges." The project is a coöperative one. Test material will be pooled annually, and individual psychologists are encouraged to continue their experiments to develop new tests and new methods of testing. Arrangements will be made so that they may secure results from large groups of college students.

<sup>16</sup> MacPhail, A. H. *loc. cit.*, p. 77.

<sup>17</sup> Whipple, G. M. *Twenty-First Yearbook* (1922), p. 266. In this and in succeeding footnotes *Yearbook* refers to the publications of the National Society for the Study of Education.

Another feature of the test program is the conservative auspices under which the tests will be produced and distributed. It happens occasionally that those who are interested in the mental test movement become so enthusiastic about its possibilities that they make extravagant claims for the tests. It also happens that educators who are cautious in accepting innovations are offended and in self-defence denounce the whole mental test movement. It is our purpose so to conduct the coöperative test program that the annual reports will show the advantages as well as the limitations of psychological tests in the light of extensive statistical data from the coöperating colleges.

It is planned, further, to select the best tests every year for use the following year and to eliminate those tests which are not universally satisfactory. . . the test program will incorporate not only the conventional psychological tests for intelligence but also several subject-matter tests such as tests in arithmetic, English grammar and rhetoric, vocabulary, and prose reading. By combining several objective subject-matter tests with the more formal intelligence tests the relative value of these different forms of examination for the selection of college students can be ascertained.<sup>18</sup>

**What should be the requirements for college entrance?** In attempting to answer this question, it is necessary to take into account the problem of the college, the problem of the high school, and investigations of the means of selecting college students now at our disposal. Higher institutions of learning are anxious to find the agencies most effective in weeding out the unfit. Natural ability and previous preparation have been regarded as the chief considerations. Both these factors are dependent in no small degree upon such character traits as industry, perseverance, and integrity. The most desirable student is not necessarily the young man or the young woman who makes a merely satisfactory record in curricular activities. He or she must have serious purpose and a sincere desire to use a college education for social betterment, not merely for personal gain.

It is hard to prove that the type of education which should

<sup>18</sup> From a circular of information published in 1924.



best fit for college is different from the education which should best fit for "life"; it is not so hard to show that the secondary-school course now asked of prospective college students is poorly adapted to that large number of boys and girls who will end their formal education at or before the twelfth school year. There can be no evasion of the fact that college preparatory methods still dominate the studies these boys and girls pursue. Secondary-school officials should be released from the college tradition; they should be allowed to adapt subject-matter to the needs of their pupils. College officials, on the other hand, should cease to regard the public secondary school as an institution whose chief purpose is to select college students along lines laid down by the college. They should be willing to grant to the secondary school the same degree of autonomy the college enjoys.

Entrance requirements change slowly, because collegiate institutions are conservative and because they naturally insist upon a thorough testing of proposed changes. In light of the statistical evidence presented in this chapter, and in light of experimentation now being conducted in many colleges and universities, it seems that a plan which includes the relative standing of pupils in their secondary-school courses, an estimate of character traits, and a measurement of mental ability, will ultimately prove the most desirable. Whether or not the last factor should aim only at an estimate of the candidate's native intelligence cannot now be foretold; intelligence and subject-matter tests, given separately or in combination, may prove best. Such a plan should give to the colleges a superior type of student, it should leave the high school free to meet its own problems, and it would allow secondary-school supervision to be lodged in the state departments of public instruction where it belongs. As a matter of fact, considerable change has



already been made towards this method of admitting students to college.

Units required for college entrance should be earned in senior high school. The spread of the junior high school has raised another problem in college admission. If the junior high school is to work out its own curriculum (and it must do so if it is to fulfill its function), ninth-grade work must be under the control of junior-high-school administrative officers, not under the control of senior-high-school principals nor college authorities. If 15 units are prescribed for admission to college, it is obvious that not fewer than three of these must be given in the ninth grade. But high-school principals have sometimes manifested an unwillingness to let the ninth-grade work go from under their control, and college authorities have been hesitant in modifying admission requirements in such a way as to allow any considerable change in the ninth grade.

The North Central Association <sup>19</sup> has gone on record as favoring an arrangement whereby the standards for college admission shall apply, whenever a school is organized in some other way than as a traditional four-year high school, only to the tenth, eleventh, and twelfth grades. The Universities of Nebraska and Michigan have adopted admission requirements in harmony with this point of view. Wellesley College has a plan of admission wherein the work of the junior high school is recognized. Prescribed and restricted subjects may be taken in the senior high school, and the free electives may be used for the work taken in the ninth grade. The student must, however, take the comprehensive examinations of the College Entrance Examination Board.

**College scholarship and later career.** Woodrow Wilson once made the remark that the side-shows of college athletics, student clubs, and other extra-curricular activities are

<sup>19</sup> *Report of Proceedings* (1924), p. 20.

becoming so important as to overshadow the main tent. Certain writers on secondary education, in commenting upon extra-curricular activities, have asserted that the pupils are taking their education into their own hands, the implication being that subjects are not so important as pedagogues suppose. Faculties of secondary schools and colleges, however, are still firmly convinced that the most important thing about a school is its curriculum. Although the general public does not demand that teachers prove the worth of the work they are doing, it is nevertheless regrettable that more adequate data are not available to show the value of a secondary or of a college education. From the standpoint of the theme of this chapter, the question may be put as follows: What relationship exists between college scholarship and later career?

A number of studies have been made to determine this relationship. The method of investigation has been, in general, to rate the graduates in accordance with scholarship, and then to see how the men of the different scholarship levels ranked after a number of years according to some such standard of success as inclusion in *Who's Who*, or according to success as judged by their own classmates or by college authorities. The general trend of conclusions derived from these investigations shows that men of high scholarship are more likely to be successful in later life. These studies are not in agreement, however, when it comes to showing how much more likely a man of high scholarship is to attain success or fame than a man of mediocre or low scholarship. According to some investigators, this relation is very pronounced; according to others, the relationship exists, but only to a small degree.<sup>20</sup> The difficulties incident upon

<sup>20</sup> These investigations are summarized by Gambrill, B. L. *College Achievement and Vocational Efficiency* (1922), chap. 2. See also p. 78 and chap. 7.

collecting data necessary for such a study will at once be apparent.

In a recent study, Miss Gambrill undertook to find the relationship between scholarship and success in life, the latter being judged by the salary received a number of years after graduation. She collected data from 563 men and 590 women who graduated from a number of different colleges in 1903. After  $12\frac{1}{2}$  years, the occupations to which the men had gone, in order of importance as determined by number of men entering, were business, teaching, law, medicine, ministry, and other or unknown occupations. The majority of the women had become home-makers. About half those unmarried were engaged in teaching; the remainder in business or professional work.

The relation between college standing and income was so slight as to warrant the conclusion that little dependence should be placed upon marks as the chief basis for predicting the kind of success that the average employer has in mind when he consults the appointment committee in regard to its students or graduates. Indeed, "the low correlation between marks and income probably means that the qualities which lead to vocational efficiency, as indexed by the world at large, are only in part, in smaller part than we had believed was true, the qualities measured by success in the college curriculum." Participation in extra-curricular activities seemed to be a somewhat more reliable criterion of vocational efficiency than were college marks.

It seems that scholarship determines more accurately the type of occupation which the graduate will enter than economic success. The average scholarship of those entering teaching was highest, while the scholarship of those entering business was lowest. High in scholarship were those graduates who entered engineering and law, while those entering medicine held a middle position.

Miss Gambrill's investigation had to do with liberal arts students, whose college work contained, except in the case of the teachers, little of vocational significance. Investigations are needed to determine the relationship existing between scholarship in professional curricula and later success in the profession for which training was taken. If possible, standards of success other than financial remuneration should play a part in judging results.

### TOPICS FOR DISCUSSION AND INVESTIGATION

1. What are the entrance requirements in each of the leading collegiate institutions of your State?
2. Suppose a parent should bring legal action to restrain the authorities of a state university from excluding his son on the grounds of poor scholarship in high school. What would be the result?
3. Do colleges and universities which require that candidates for admission secure a certain grade or mark in their secondary-school subjects really accomplish their purpose of selecting good students and rejecting poor students?
4. Suppose that a college or university should admit to freshman standing any graduate of a high school accredited by the office of the state superintendent. Would the academic standards of the institution be lowered?
5. Should a degree stand for four years of collegiate work, or should it also be a guarantee of excellence in secondary-school preparation?
6. Is it advisable to require a college student to continue for a year or more certain studies begun in the secondary school?
7. Outline a plan of admission which would, in your opinion, best select students capable of doing college work.
8. Is the policy of equal educational opportunity violated by the tendency to deny to certain classes of students a college education?
9. Compare the entrance requirements of a number of the leading private colleges and universities with the entrance requirements of influential state-supported colleges and universities.
10. Study the changes which have occurred during a period of years in admission requirements of a college or university.
11. Assume the six-four-four plan of organization for the public school system. What will be the effect upon college entrance requirements?
12. Is there a difference in the quality of work done in small and in large high schools? See Thornburg, L. H.: *School and Society* (1925), 22: 441-48; Association of Colleges and Secondary Schools of the Southern States, *Report* (1924), p. 171; *Bureau of Education Bulletin* (1918), no. 47, p. 8.

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## CHAPTER V

### SECONDARY SCHOOLS OF ENGLAND, FRANCE AND GERMANY

**Introduction.** From the discussion in Chapter I it is evident that the early American secondary schools owed much to Europe. In colonial days there was, for instance, the same line of demarcation between the schools for the masses and the schools for the classes. In this respect American practice was clearly European in origin. The conviction that a democracy can exist only if its citizens are intelligent and educated has always prevailed in this country; and in time it entirely supplanted the original belief that schools must exist to enable one to read and understand religious precepts. There has been an amalgamation of the schools for the masses and the schools for the classes. England, France, Germany, and other European countries have long seen the wisdom of providing a common-school education for all, but the line of cleavage between the schools for the common people and those for the classes has always been pronounced. However, there are evidences that even in Europe the lines of social distinction in education are beginning to fade.

Attention has also been called to the fact that the academy was influenced by European theory and practice. Similarly, American schools have at other times come under the sway of European ideas. Of late years the influence has perhaps been less pronounced than formerly, due to a growing independence of thought and to the development of a rich indigenous pedagogical literature. Nevertheless, a study of European schools offers numerous and valuable suggestions for American practice.



In this chapter the systems of secondary education in England, France, and Germany will be briefly outlined and contrasts made between the schools of the three countries and the American secondary school.

**A division in European schools.** Generally speaking, the school system of England, France, or Germany consists of two divisions: one of these is for the rank and file and is comprised of the common or elementary schools (called "primary" in England and France and *Volksschulen* in Germany); the other, for the select few, includes secondary schools. The average boy or girl enters the common schools at the age of six and remains until the age of twelve or fourteen. A curriculum not greatly different from that found in our own elementary schools is followed, for, aside from the preparatory feature, the purposes of the elementary school here and abroad are largely the same. Further educational advantages are not closed to all these pupils. However, most of them can enter only continuation, evening, or day schools where the emphasis is placed upon industrial training. Some find their way into the regular secondary institutions. For the most part this last class is composed of bright children selected from the elementary schools for attendance without tuition in the secondary schools.

In England and France (and in Germany prior to the Reform of 1924) children of the well-to-do classes are usually sent to private elementary schools or to schools for beginners attached to the secondary schools, where tuition must be paid. These children find the avenue to higher education open.

**Secondary schools in France.** The *lycée* and the *collège* are the real secondary schools of France. Of these the *lycée* is by far the more important. It has been and still remains the aristocratic, conservative secondary educational institution of France. Although maintained by the State, a tuition

fee is charged which so far has been an effective barrier to the common people. The *collège* has the same organization and theoretically is of equal rank; actually, it does not have the prestige. It is a newer institution and is supported by the local community.

*Schools for boys.* A boy enters the *lycée* or *collège* at the age of ten. Ordinarily he will remain seven years. The first four of these seven years are grouped into what is called the first cycle, which is aimed to give an education complete in itself should it be necessary or advisable for the pupil to withdraw at the end of that time. The last three years comprise the second cycle, also complete in itself, although articulated with the first four years. At the outset a decision must be reached as to whether the lad is to have a classical or a modern education. If it is to be classical, the study of Latin is started immediately and Greek is begun with the third year; if it is to be modern, the boy need study neither Latin nor Greek, but he must in the first cycle give more time to such subjects as French, drawing, science, etc. In the second cycle choice may be made among the following sections: (a) Latin and Greek; (b) Latin and modern languages; (c) Latin, science, and mathematics; and (d) modern languages and science. During the last year the pupil specializes in philosophy or mathematics. All study modern languages, history, and geography, mathematics, science, and drawing, and all receive moral teaching, whatever the original choice. The number of class periods per week, however, may vary with the section.

*Schools for girls.* For girls, separate secondary schools are maintained. Girls enter these institutions at the age of twelve, after taking preparatory training in attached elementary classes. As they were organized before the World War, there were no provisions in the French secondary schools for girls who wished to study the classics. Changes

effective for the school year of 1924-25 remedied this defect. Under the plan put into operation at that time, girls and boys will pursue the same course for the first six years. At the end of that time two lines of training open to girls, one containing home economics and other studies suitable for training in home activities, the other containing the classical languages. The period of secondary education was extended from five to six years. This change gave to girls practically the same advantages enjoyed by boys. However, the number of *lycées* and *collèges* for girls is entirely inadequate.

*Advanced primary schools.* A French child who has finished his elementary education and received a certificate, and who is successful in a competitive examination, may enter the advanced primary school. This school is much like the American secondary school. It takes pupils at about the age of thirteen, keeps them three years, and gives them during the first part of their stay what might be termed general education. Later instruction is specialized to a considerable extent, and adapted to the locality in which the school is situated. There are not, however, sufficient schools for all who would attend them. In 1920, these schools enrolled about 62,000 pupils. The same year there were in France about 2,500,000 boys and girls thirteen to sixteen years of age.

*The return to the classics.* Soon after the War certain educational leaders in France undertook to bring about changes in the organization of secondary schools. These changes involved a new statement of the purposes of secondary education, and a consequent change in the program of studies. The party instituting the reform held that secondary education should be purely cultural and intellectual, and free from utilitarian influence. They maintained that Latin and Greek are the chief instruments for securing this type of education, first, because they have

proved their value in giving mental discipline; and, second, because they are the antecedents of French culture. The secondary program instituted in 1902 was criticized because it necessitated immature specialization. Adverse criticism was also directed against the existing articulation between elementary and secondary schools, which was such as to make it practically impossible for a child to transfer from the elementary school to the *lycée* or *collège*. Accordingly a decree was issued in 1923 requiring all pupils to study the same subjects during the first four years of secondary education. Latin was listed as a required study throughout the four years, and Greek for the last two. Later, three courses were open: a full classical course, a modern course, or a modern course with Latin. In the last year the pupil had the option, as he formerly did, of specializing in philosophy or mathematics. To facilitate articulation, the curricula of the elementary school and the preparatory classes attached to the secondary schools were made the same. The reform also expected to extend the system of scholarships, so that rich and poor alike might profit from instruction. (The intellectual aristocracy, which it is the function of French secondary education to create, would thus be drawn from the intellectually fit of all classes.)

This step aroused great interest in this country, and it has been used to support the position of American formalists in education who urge a return to the classics. It aroused opposition in France, where those against the change urged that the classicists failed to recognize the difference between past and present conditions. They argued that the old education, adequate to the needs of bygone days, is insufficient for the needs of the present; that required Latin and Greek would form a social class of leaders in the literary pursuits, but throttle the education of future leaders in agriculture, commerce, and industry; and that comparisons between

French and Latin should not result in the disparagement of the former, which has a culture of its own worthy of independent study. Finally, it was urged that modern languages are not inferior disciplines; they "train the powers of discrimination, analysis, accurate reasoning, trustworthy observation, and retentive memorizing."

The minister of education who issued the decree retired from office shortly after his edict became effective. His successor promptly issued a decree allowing the classical course to stand, but reintroducing a parallel course containing modern languages. These regulations became effective in the fall of 1924, "pending the complete reconstruction of the course of secondary studies."

**The English "public" schools.** By far the most important secondary institutions in Great Britain are the English public schools.<sup>1</sup> A boy enters one of these schools at the age of thirteen or fourteen, having been prepared in one of the private "preparatory" schools existing solely for that purpose, and remains until the age of eighteen or nineteen. He then goes on to the university, provided he has passed the entrance examinations. During his stay in the public school he has studied a great deal of Latin and probably Greek, and he has had an option between intensive study of the classics and a curriculum consisting of modern foreign languages, mathematics, and social sciences. He has been able to advance as fast as he liked, for the curriculum is quite flexible even though it contains six classes or "forms."

The masters soon make the boy understand that Latin is absolutely necessary for intellectual growth and development, in addition to being the chief hurdle of the examina-

<sup>1</sup> "An American wag, commenting on the name 'English Public Schools,' said that they were called English because they taught so much Latin, Public because they were private, and Schools because two thirds of the time they taught nothing but games." Sandiford, P., *Comparative Education* (1918), p. 257.

tions. Sooner or later, however, the lad becomes cognizant of the fact that it is not so important for him to become an intellectual as it is to develop a healthy body, a capacity for leadership, and sound character. He learns that everybody regards games and the traditions of the school as being the chief means for accomplishing these ends. He therefore belongs to a team and on two or three days of the week actively engages in sport, where he develops "bodily vigor, good temper, self-control, the ability to obey intelligently and to command." He lives with a group of other boys in a "house" under the direction of an assistant master who exercises great influence upon the group. Moreover, the entire school atmosphere is saturated with the traditions of from 300 to 500 years. Men who have made their mark in English public life, and often upon the benches and walls of the buildings, have attended the school. All this has a profound influence. It is said that the influence of these schools is stamped upon the boys "to such a remarkable degree that when they come up to the university, the 'initiated' can differentiate among Wykanists, Etonians, Rugbeians, Harrovians, and the like, as unerringly as the traveled American can distinguish among Yankees, Southrons, and Middle Westerners." <sup>2</sup>

The product of the English public schools does not compare favorably with the product of the secondary schools of France or Germany in scholarship. In explanation, it may be said that in the English schools qualities of leadership and self-direction take precedence over scholarship; on the Continent, all energies are bent toward securing scholarship.

*Other secondary schools.* In addition to the nine "first-grade" secondary schools there are a number of other institutions of more or less comparable rank. There is a

<sup>2</sup> Farrington, F. E. *Principles of Secondary Education*, edited by P. Monroe (1914), p. 125. Reprinted by permission of The Macmillan Company, publishers.



second list of public schools similar in most respects to the "first-grade" schools. Second, there are the private day schools. These, like the public schools, are maintained by their endowments and by tuition; unlike the public schools, their pupils are day pupils and their courses are more modern. Third is the grammar school, which has its foundation and charges tuition, but draws its pupils from the immediate neighborhood. Fourth, England has a number of privately supported secondary schools for both boys and girls. Although considered weak from the standpoint of work done, these schools before the War enrolled nearly a third of all the boys, and nearly three fourths of all the girls, found in English secondary schools. Nearly all of these four classes of schools actively imitate the nine "first-grade" public schools. Fifth, England has many tax-supported schools of secondary grade formerly under the control of local boards, but recently placed under the control of more centralized agencies. Sixth, there are the "municipal" secondary schools, controlled by municipal authorities, and quite similar in aims and patronage to the American secondary school. These schools have made great strides since 1918, and now occupy a prominent position. They seem destined to grow in public favor.

Speaking generally, England thus has independent private secondary schools, private secondary schools which submit to state inspection and receive state aid, publicly supported secondary schools which are also the recipients of state funds under the provisions of the Act of 1902, and municipal secondary schools made possible by the Act of 1918. Nevertheless, many boys and girls who would gladly attend secondary institutions find it impossible to do so. Shortage in accommodations is alleviated in part by a system of scholarships, which exists in all types of secondary schools. Not many pupils enter the aristocratic institutions through schol-

arships; however, at least twenty-five per cent of the places in schools receiving state aid must be "free places," to be filled by children from the public elementary schools who have passed a mental and physical examination. For a number of years the actual number of free places has been in excess of twenty-five per cent.

*Fisher Act*  
**The Fisher Act.** In 1918, England passed the Fisher Act, one of the most advanced pieces of educational legislation ever written into the laws of a nation. The general purpose of the Act was the "establishment of a national system of public education, available for all persons capable of profiting thereby." School attendance is made compulsory for all boys and girls between the ages of five and fourteen. A child must continue in school, not until his fourteenth birthday, but until the end of the term in which his fourteenth birthday occurs. Local authorities are permitted to extend this age to fifteen, and to make provision for advanced instruction which pupils sixteen years of age or over may attend. Extensive provisions are made for physical training and medical inspection, fees in elementary schools are abolished, and no one is to be kept out of school because of his inability to pay. Elementary-school pupils receiving scholarships may be given maintenance if such is found to be necessary. Provisions regulating the conditions under which children may work are also included. Street trading is forbidden and the "half-time system," under which pupils seven to fourteen years of age worked long hours before and after school, is abolished.

It is the duty of the local authorities in charge of the schools to make arrangements for the "preparation of children for further education in schools other than elementary, and their transference at suitable ages to other schools." Accordingly, initiatory measures were early taken in many places to provide secondary schools to which all pupils

might be transferred at the age of eleven or twelve from the elementary schools. The secondary schools were depended upon to hold the pupils until the age of fifteen or sixteen. In other places the period of elementary instruction was extended until fourteen, after which the child was to enter a junior trade, technical, or commercial school for full-time instruction for two years. Schools of either of these types are regarded as fulfilling the requirements for compulsory education of the Fisher Act. Pupils leaving school at the age of fourteen are required by the provisions of the Act to attend free continuation schools for 320 hours per year until the age of eighteen. For the first seven years after the passage of the Act, however, attendance may be asked of the pupil only until he attains the age of sixteen, and the number of hours may be materially reduced.

*Difficulties of enforcement.* The provisions of the 1918 Act have not been fully carried out. There has been much unemployment in England, trade fell off directly after the War, interest on an immense war debt had to be met. These and other things raised a cry of economy. Undoubtedly there was some reasonableness in the assertion that the nation could not afford to spend vast sums on education; on the other hand, those most active in obstructing educational advance are often accused of concealing their real motives behind their plea of economy. They are the very persons, it is asserted, who would maintain the old order. They see no reason for granting educational advantages to the "laboring poor." As a matter of fact governmental appropriations have been reduced, teachers of inferior qualifications have been employed, the development of "nursery schools" checked, medical inspection delayed, and classes increased in size or discontinued. A long contention over teachers' salaries has ensued. In many places the time for the continuation classes has been reduced from two years to one, or the

compulsory-attendance feature has not been enforced; in other places no continuation schools have been established. Advance in secondary education has been similarly obstructed.

*Advance in education under the Fisher Act.* On the whole, however, England has made substantial progress in advancing education. The number of pupils attending grant-aided secondary schools and the number of free places doubled during the decade beginning with 1913. Even then, however, not more than ten per cent of the children leaving the elementary school passed on to the secondary school. A number of tuition pupils were excluded because of lack of accommodations; others who had scholarships could not enter the secondary schools because of an insufficient number of free places. A general summary of the important changes brought about by the Fisher Act is given in the following quotation:

In the future no child may leave school before the completion at least of his fourteenth year. Half-time is dead; the system of whole or partial exemption from school-attendance is gone. The child must stay at school till the end of the term in which his fourteenth birthday occurs. This point in itself represents an exceptional gain. Formerly, children left during term-time, and classes were continually breaking up. Also, such children were lost to Higher Elementary Schools, because it was found difficult to accept them after the term had begun.

Children may stay on for another year or even longer. Many are doing it already. To this really universal system of primary education there is added the practical extinction of child labour. The reinforcement of the school medical service by means of provisions of the Act has been and is an increasing source of benefit to all. The Act provides for wide extensions of educational activities in the regions of social and physical training. In spite of the financial stress, the Local Authorities, with but few exceptions, are bringing the provisions of the 1918 Act into operation. The Act is now the law of the land. It may be that a decade or more will be necessary to realize all its provisions. It is not likely that

the English labourer will always allow his children to be cheated of what the law provides as their birthright — an opportunity to make the most of themselves.<sup>3</sup>

**The secondary schools of Germany.** The schools of Germany were extensively reorganized in 1924. The general plan includes a *Grundschule* which all children six to ten years of age must attend. Pupils not selected for the secondary schools continue in the *Volksschule* until the age of fourteen, when they enter *Fortbildungsschulen*, which are evening or day schools preparing for the lower trades. There is no industrial employment until the child has finished at sixteen the industrial school. Children selected for the secondary schools enter one of the four *Gymnasia* where they remain six years. At the end of that time they may enter professional schools preparing for the middle trades, mostly industrial or commercial in nature. On the other hand, they may remain in the secondary school proper for three years longer, and then enter the university, which is a graduate school only, or they may enter schools preparing for the higher technical pursuits.

German secondary schools were extensively revised by the reform of 1924. There are now four types.<sup>4</sup> One (the *Humanistisches Gymnasium*) strives to reinterpret ancient life and culture in terms of present German life. Greek and Roman history, literature, and language are drawn upon heavily. Another (the *Euröpaistisches Gymnasium*) has as its province the comparative study of the cultural contributions of the various European countries. The interrelations

<sup>3</sup> Roman, F. W. *The New Education in Europe* (1923), p. 60. Quoted by permission of Messrs. E. P. Dutton & Co., the American publishers, and of Messrs. George Routledge and Sons, Ltd., the English publishers.

<sup>4</sup> These supplant the *Gymnasium*, with its classical curriculum; the *Oberrealschule*, with its science and mathematics (modern) curriculum; and the *Realgymnasium*, which represented a compromise between the sponsors of the classical and modern curricula.

and interdependence of these contributions are greatly stressed. The curriculum of the third (the *Mathematisch-Naturwiss Gymnasium*) is built upon the sciences and mathematics. The purpose is to bring out the methods of mathematical and scientific thinking rather than the practical applications of the subjects. A fourth (the *Deutsche Oberschule*) stresses German language, literature, philosophy, music and history—in other words, the whole field of German culture. In all of these schools the chief aim is to

TABLE 8. TOTAL PERIODS DEVOTED TO THE VARIOUS SUBJECTS  
IN GERMAN GYMNASIA <sup>5</sup>

SUBJECTS	HUMANIS- TISCHES GYMNASIUM	EURÖPAIS- TISCHES GYMNASIUM	MATHEMA- TISCH- NATURWISS GYMNASIUM	DEUTSCHE OBERSCHULE
Religion.....	18	18	18	18
German.....	32	35	34	44
Philosophy.....	2	2	2	2
Latin.....	56	13	—	13
Greek.....	36	—	—	—
French.....	—	26	40	—
English.....	9	44	20	45
History.....	22	22	22	26
Geography.....	12	14	14	18
Mathematics.....	30	35	46	35
Science.....	18	22	35	30
Drawing.....	14	18	18	18
Singing.....	4	4	4	4

Religion is given two periods per week throughout the nine years, making a total of 18. Other computations are made in a similar manner.

Another modern language may be taken in the place of English in the *Humanistisches Gymnasium*. The time allotments to French and English may be reversed in the *Mathematisch-Naturwiss Gymnasium*, or to English and Latin in the *Deutsche Oberschule*, or to English and French in the *Europäistisches Gymnasium*.

give higher insight into human life. The entire body of cultural materials is conceived as being too vast to be comprehended by one person, hence its division among the vari-

<sup>5</sup> Compiled from a series of tables used by Dr. Fritz Kellerman, *Studienrat* in Kassel, and participant in the German Educational Reform of 1924.



ous schools. The organization of the curricula is shown in Table 8. In each school about a third of the time is devoted to subjects characteristic of the purpose for which the school stands, another third is devoted to ethical subjects, and the remaining third to minor subjects. Electives, designed to widen and deepen the various courses, are offered in the two upper years. Great care is taken to correlate all subjects with the main purpose of the school.

Secondary schools for girls have the same organization. There are not, however, sufficient schools to accommodate all who desire to attend.

*Intermediate schools.* The intermediate school is a partly technical, partly secondary institution, with the first three years of its course identical with the first three years of the *Volksschule*. During the last six years the aim is to furnish, in addition to an intensive study of the elementary subjects, instruction in a foreign language. Ostensibly, the purpose of the intermediate school is to fit boys and girls for the demands of trade, industry, and fine arts; as it has turned out, the school is patronized because of the somewhat higher social recognition it gives. Intermediate schools are often maintained by communities of insufficient resources to maintain secondary schools. When such is the case, pupils are allowed to transfer to secondary schools. Articulation also exists with some of the technical schools.

*The popular high school.* In 1919, the Prussian minister of education issued a proclamation which called into existence the "popular high school" (*Volkshochschule*). The purpose of the popular high school was to bring education to the people of the working classes. Special stress was laid upon the teaching of citizenship. Instruction was designed to increase general education, and had no outlet in the universities. Anybody might attend. At first these schools were very popular, and were established in large numbers

Difficulties soon arose. It was found, in the first place, that the people for whom the schools were originated either did not appreciate what was being done for them or did not have the intellectual curiosity credited to them. At any rate, attendance upon the courses of the popular high school fell off rapidly. Moreover, the instructors found themselves facing great difficulties in teaching, for the students in their classes represented all grades of intellectual accomplishment. After some time the teachers succeeded in modifying their methods so as to reach the members of their classes. Although the institution has had a somewhat uncertain existence it will probably survive. If so, it will undoubtedly experience further changes, and in the end become "an institution fitted to the needs of the German people."<sup>6</sup>

**Educational changes in Germany.** Perhaps the same spirit which gave Germany a republican form of government is behind a number of changes now being manifest in the schools. These changes are so many and so varied as to make adequate description impossible in the space at our disposal. In general they show a tendency to break away from the almost military organization typical of the past, and to substitute greater freedom of thought and action.

The power of the school authorities has been modified. Teachers have a greater voice in the conduct of the schools, and much greater freedom in methods of teaching and in adapting the courses of study. An attempt has been made to break the line of demarcation which formerly existed between teachers in the common schools and those in higher schools.

More freedom has been given to pupils, and parents are not only allowed but encouraged to visit the schools. The "youth movement," originating about 1900, expressed the pupils' dissatisfaction with the schools as they existed at

<sup>6</sup> Puckett, H. W. *Sch. and Soc.* (1923), 18:241-45.

that time. The desire was for less formalism and intellectualism, and for more freedom in the development of ideals and the more spiritual things of life. Of late something very similar to the extra-curricular activities and student participation in school government in our own secondary schools is in evidence in the schools in Germany. When former methods of control and discipline are considered, and when it is remembered that the parent has never been a welcome school visitor, it will be realized that these changes have a profound significance.

The religious bodies formerly exerted considerable influence upon the schools, even those non-parochial in character. The schools have now been more or less freed from this influence. Whether or not the child shall have religious instruction may be a matter for the parents to decide; or the child himself may have a voice in the matter if he has reached a certain age. Again, religious instruction may not be given at all. Needless to say, this change is bitterly opposed by certain religious denominations.

The movement to break the distinction between the schools for the masses and the schools for the classes. A very significant movement is in evidence which will, if successful, open the secondary schools of the three countries to all pupils capable of profiting from them, irrespective of social and economic status.

*In Germany.* This movement has already achieved success in Germany. Prior to 1924 the higher schools for boys maintained attached preparatory classes. It was theoretically possible though not at all probable for a boy to transfer from the common schools to the secondary schools. These preparatory schools have been abolished, and all children must attend the common schools (*Grundschulen*). Pupils are selected for the secondary schools without regard for social status by an examination set by teachers of the com-

mon schools and of the secondary schools. In Germany wealth and social status have thus ceased to be prerequisite to secondary education.

*In England.* Two forces are working against the policy of economy which has hampered educational progress in England. They are also openly critical of the Board of Education for yielding as much as it has to those who maintain that England is too poor to spend money on the schools. One of these forces is the Labor Party, the other the National Union of Teachers. The Labor Party actively supported the Fisher Act of 1918, and worked hard to get it put into operation. The National Union of Teachers has come out in favor of abolishing the old distinctions between elementary and secondary education. The Union demands that elementary education be regarded as preparatory only, and that it "be followed by an education to be classed as secondary, and this should be available for all children who have gone through the preparatory stage." It is not expected that this change will come without a struggle, for it will be opposed by the higher social and economic classes and by business men who are opposed to more taxes. In the long run, however, Tawney predicts that education will be reorganized so that elementary education, extending from six to eleven years of age, will be followed by secondary education for all from eleven to sixteen.

We shall get rid of the absurd idea that "elementary" education is a particular *kind* of education, and we shall abandon the equally absurd idea that education is not "secondary" unless its curriculum is modelled on that at present demanded by the Board, a curriculum excellent in itself and allowing a wide and wise latitude, but requiring to be broadened still further if secondary education is to be adapted to the needs of the great majority of children. We shall abolish fees, enormously expand our system of maintenance allowances, and get rid of that curious anomaly — in itself an illuminating comment on our educational history —

by which there are two separate codes of regulations for elementary and secondary schools, actually prescribing a different standard as regards such matters as floor and air space and playing grounds for the two, as though an elementary school child had smaller lungs and fewer legs than his brother in a secondary school!<sup>7</sup>

*In France.* For some years the radical party has been agitating the "single school" (*École Unique*). In 1925, a commission was appointed to prepare plans for the realization of the single school. The radical party would substitute for the present school system, with its division between the classes and the masses and its overlapping, an educational ladder similar to the one which exists in this country.

It would open the way to secondary and university education to every youth of capacity, regardless of his social position or his ability to pay. It is realized that the single school will be established with difficulty. France is conservative in educational matters, and the strongly entrenched present system will have the support of the higher social classes which it now serves. However, the radical party is of the opinion that the time has come for practical measures. The degree of success achieved will be of great interest.

**Percentages served by secondary schools.** Recently compiled statistics do not exist to permit a close comparison of the ratios of the secondary-school population to the total school population in England, France, Germany and the United States. About three years before the outbreak of the World War these ratios were: England and Wales, one secondary-school pupil for every 202 of the total population; France, one to 300; Prussia, one to 122; United States, one to 83.<sup>8</sup> In interpreting these figures the different ages covered by the various secondary schools should be borne in

<sup>7</sup> Tawney, R. W. *New Republic* (1923), vol. 36, part 2, p. 26.

<sup>8</sup> Farrington, F. E. In *Principles of Secondary Education*, edited by Paul Monroe (1914), p. 141.

mind. The reader will also remember that the enrollment in the secondary schools of this country has increased remarkably since 1912. Due in part to economic conditions, similar increases have not been experienced in the other countries, so that the differences would probably be even greater. Without doubt the United States sends far larger percentages of its young people to secondary school than any other nation, and it is often claimed that the total secondary enrollment of this country is greater than the combined enrollments in similar schools of all other nations.

**Time covered by secondary education.** The reader will not have failed to notice that in England, France and Germany secondary education begins at a relatively early age. This practice has not been without effect upon American secondary education. Throughout the period of agitation for the junior high school, it was cited again and again. If it did nothing more, it helped to focus the attention of educators upon the advisability of a downward extension of the high school. Likewise, the relationship existing between European secondary schools and universities has been in the minds of many of the proponents of the junior college. The similarity to the German or French organization of an organization which assigns the first two college years to the secondary school and makes the university a place of specialized study and research, will at once be apparent.

**Thoroughness in scholarship.** Mr. H. A. L. Fisher, former minister of education in England and author of the educational bill which bears his name, recently praised our primary schools as being excellently adapted to their purpose, but criticized the American secondary school as being superficial and lacking in scholarship. A number of prominent American educators, when asked to comment upon his statements, agreed for the most part with what Mr.



Fisher had said.<sup>9</sup> This is not the first time such criticism has been offered, nor is it the first time American educators have admitted the inferiority of scholarship in our secondary institutions. Several factors contribute to this situation. In the first place, students in European secondary schools are highly selected. They are, as a matter of fact, rigidly selected. Our public secondary institutions, on the other hand, take any and all who have completed the work of the grades, and they strive to retain all pupils who enroll. This has probably brought about a lowering of standards and a cheapening of the high-school diploma. In Germany and France graduation from a secondary school has immense social and economic value. The disgrace attendant upon failure is such as to spur the student to his best efforts. Such is not the case in the United States. In general, it may be said that lower scholarship is the price we pay for the influence exerted over large numbers of students.

Mr. Fisher also expressed the opinion that the work of the American college is likewise superficial, and that private secondary schools are increasing in importance. The first of these statements was not vigorously disputed; it was pointed out, however, that the work in the American graduate schools is exceptionally thorough, and that it would compare favorably with similar work found anywhere in the world. The second statement brought general disagreement. Statistics of enrollment show plainly that the private school is not becoming increasingly important in this country.

**Training of teachers.** Excellently trained teachers, especially in France and Germany, undoubtedly account in part for the superior scholarship of the products of their schools. Since the training is similar for the two countries, our consideration will deal only with the preparation required in Germany.

<sup>9</sup> Reported in *Sch. and Soc.* (1925), 21:101-02; 506-07. See also *Collier's Weekly* for April 11, 1925, and *Scribner's Magazine* for April, 1925.

A regular teacher in a boys' higher school must first of all complete the work in one of these schools. This is equal to junior standing in an American college. Next, he must spend about five years in a university, where he studies psychology and education, philosophy, religion, German literature, and at least two subjects which he expects to teach. Incidentally, the German teacher is not allowed to teach subjects for which he is unprepared. He next proceeds to spend a year writing a thesis and taking two examinations. Having passed the examinations, he spends a year in studying psychology and education and another in practice teaching. The candidate is now ready for appointment. His name goes on a list, but it may be some time before he is actually given a place.

The teacher in the German secondary school is thus better trained than the average member of the American college faculty. He has all the training necessary for the degree of Doctor of Philosophy and could take it if he wished, and he has in addition what many college teachers flatter themselves they can do without — professional training for his work. The contrast with the training of the American secondary teacher is striking. On the one hand we have the individual who has deliberately chosen his profession, thoroughly prepared himself for it, and entered it after proving his fitness for it; on the other hand, we have all too often the hasty decision to teach "until something else turns up," a scramble to make the semester hours in education demanded by the state requirements — and teaching, perhaps for several years, with an eye single to a better opening in other work. America can well take suggestions with respect to the training of secondary teachers from Germany and France.

# TOPICS FOR DISCUSSION AND INVESTIGATION

1. What place does Sturm hold in the history of German secondary education? What place does Ascham hold in English educational history?
2. Compare the training received by English, French, German and American secondary-school teachers.
3. Describe school life from the standpoint of the student in the German *Gymnasium*. In the English public school.
4. Compare the methods used in German and American schools.
5. Draw a figure representing the German school system as it existed prior to the reform of 1924. Indicate the changes which have since transpired.
6. What suggestions do you get from French or German practice for improving the training of American secondary-school teachers?
7. Procure a description of the schools of a foreign country from some one who received his education in them.
8. On the basis of per-capita wealth, compare the United States, Germany, France and England in ability to maintain schools.
9. Compare the policies of England, France, Germany and the United States with respect to the following: education of women; separation of general or cultural education and vocational education; centralization of control of schools.
10. What is the history and present status of the bill to create a national department of education in the United States?

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## CHAPTER VI

### PROBLEMS IN THE REORGANIZATION OF SECONDARY EDUCATION

**Origin of the eight-four plan.** In Chapter I it was shown that our system of schools, which has until comparatively recently comprised eight grades in the common school, four years in the high school, and four years in the college or university, represents a somewhat accidental growth. Each of the three divisions sprang from a more or less distinct source, and grew to considerable proportions somewhat independently of the others. For many years the offerings of the common schools were very meager, although occasional attempts were made to improve them, and to open a passage between them and the prevailing type of secondary education. Since the thirties of the last century, when Horace Mann launched a program to improve the common schools of Massachusetts, and when other noted educators were concerned with the same problem in other States, consistent efforts have been made to improve the elementary school and to articulate it with the secondary school. From 1880 or 1890 until the beginning of the junior-high-school movement, the recognized system of education in this country has comprised eight grades in the elementary school, four years in the high school, and four years in the college. Generally speaking, these institutions have been so connected that the individual might easily pass from grade to grade, and from one unit of the system to another.

A great lack of uniformity existed among the high schools of forty years ago. Territorial expansion, the rapid development of the high school as an institution of secondary

education, the suddenness with which new high schools sprang into existence, and the partial or complete absence of supervision, are among the causes for the irregularities in standards existing from school to school.

**Influences in reorganization.** Of the numerous bodies appointed from time to time to consider the problems of the secondary school, two are of outstanding importance. One of these is the Committee of Ten; the other the Commission on the Reorganization of Secondary Education. Perhaps the most important idea, in a historical sense, back of the present reorganization is that of the economy of time. The significance of these three influences will be examined in succeeding paragraphs. . .

*The Committee of Ten.* The Committee of Ten on Secondary School Studies was appointed by the National Education Association in July, 1892, for the purpose of securing desirable uniformity in school programs and in requirements for admission to college. The report was submitted in December, 1893. As the name indicates, the Committee canvassed the whole field of secondary education, making a series of recommendations regarding the organization of high schools, the curricula to be adopted, and the content of the different high-school subjects. It likewise considered the methods of teaching and the amount of time to be devoted to the various school subjects. It caused the elimination of short, miscellaneous courses of ten to twenty weeks in length, and it caused the colleges to translate their entrance requirements into units of work thus offered. Soon after its publication, there was substantial agreement among educators that the Report was the most important educational document ever issued in the United States. For years it practically dominated the organization of the high schools of the country, and its influence is still strongly felt.

*The economy of time movement.* In the later eighties,



President Eliot took a position, which he afterward maintained, that secondary education should "dip down" to include the last two years of the elementary school. He seems to have been concerned with the problem of the increasing age of the average Harvard freshman, and to have looked upon this as a possible remedy for it. In his notable address before the National Education Association in 1888, already referred to, and in other utterances, he showed that for sixty years past the average age of college admission had steadily risen, reaching eighteen years and ten months at Harvard, and that the period beyond college graduation required for professional training had lengthened to three or four years, with the result that the average college graduate who fitted himself for any one of the learned professions could hardly begin to support himself before he was twenty-seven years old. President Eliot advocated the desirability of condensing the school courses to gain time, and of increasing the efficiency of instruction in order to secure as high an admission standard as formerly.

The problem stated by President Eliot evidently had considerable influence in the origin of the Committee of Ten, for in its Report it was pointed out that each one of the groups of experts submitting sub-reports upon the work of the high school was anxious that the work in its particular field should be begun earlier than was then customary. The general attitude of the Committee is seen in the following quotation:

In the opinion of the committee several subjects now reserved for the high schools, such as algebra, geometry, natural science and foreign languages, should be begun earlier than now; or as an alternative, the secondary school period should be made to begin two years earlier than at present, leaving six years instead of eight for the elementary school period.<sup>1</sup>

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<sup>1</sup> *Report of the Committee on Secondary School Studies.* Washington, Government Printing Office (1893), p. 14.

Dissatisfaction with the rigidity of the grade system, and the conviction that time could be economized in education, were productive of numerous plans of flexible promotions which flourished during the decade beginning approximately with the year 1890, but which have persisted only to a limited extent. These plans did not solve the problem, for the agitation against the rigidity of the school system continued. Moreover, the personality of the originator of the plan seems to have been one necessary ingredient in its success. Well-defined means of selecting pupils capable of rapid advancement were not at hand, and little attention was given to the program of studies as such.

The problem stated by President Eliot was recognized as being one which affected all secondary and collegiate institutions. The colleges and universities took up the discussion, associations of colleges and secondary schools appointed committees to formulate tentative plans, and the question was given much attention through educational gatherings and periodicals. The most effective work has been done by the National Education Association through its committees. Since 1903 continuous effort has been expended upon the problem of the reorganization of secondary education, and for twenty-five years the problem of economy of time in education was before the educational public. Its importance in initiating the junior-high-school movement can hardly be overemphasized. In the various reports rendered almost every aspect of secondary education received attention, and educational principles at the basis of the organization and administration of secondary education were thoroughly treated.

*Present movement toward reorganization.* More recently another body has been assigned the task of formulating recommendations for the control of the secondary schools. Its official title is "The Commission on the Reorganization

of Secondary Education.” Like the Committee of Ten, it was appointed by the National Education Association. In organization it consists of a reviewing committee and sixteen sub-committees. The reviewing committee is made up of ten members-at-large and the chairmen of the sub-committees. There are representatives from secondary schools, colleges, and state departments of education. It has issued a general statement of the principles governing the reorganization of secondary education,<sup>2</sup> and it has reviewed and coördinated the work of the sub-committees. Each of the sub-committees has surveyed the field of one of the school subjects, and the Reports contain statements of aims, methods, and organization of subject-matter in teaching. The first of these Reports was published in 1913, and the second in 1915. Since 1917 they have appeared at the rate of four or five per year, so that to date (1926) all but three are available.

The Reports of the Commission on the Reorganization of Secondary Education have already exerted profound influence. Not only have their views prevailed widely in the organization of junior and senior high schools, but their recommendations concerning the arrangement and presentation of subject-matter have been acted upon. Their Reports serve as manuals to guide the work of high-school teachers, or that of special committees on curriculum-making. In some instances, at least, book companies recommend their wares upon the basis of agreement with the Reports of the Commission on the Reorganization of Secondary Education.

**The rise of the junior high school.** The first American high school (1821), according to the plan drawn up for its administration, admitted boys twelve years of age who were

<sup>2</sup> *Cardinal Principles of Secondary Education*. Bur. of Educ. Bull. (1918), no. 35.

well acquainted with reading, writing, grammar, and the fundamentals of arithmetic. Boys were to remain three years, and they were to pursue studies "calculated to bring the powers of mind into operation" and to qualify them "to fill usefully and respectably many of those stations, both public and private," in which they might be placed. These specifications are quite similar to those already reviewed as functions or purposes of the junior high school.

It seems quite certain, however, that the present intermediate or junior high school did not spring from a conscious furthering of these purposes. The real beginnings trace directly to the Report of the Committee of Ten, and are intimately bound up with the economy-of-time movement. After a long period of discussion and elaboration of educational theory, during which time various forms of experimentation were carried out, the first junior high schools emerged shortly before 1910. Since then the movement has rapidly gained strength. It is not an exaggeration to say that the Nation is committed to the policy of reorganizing its schools upon a broad and comprehensive junior-high-school basis.

*Extent of the movement.* How far the movement has advanced it is difficult to say, for it is hard to get complete questionnaire returns. Moreover, one list of junior high schools differs from another because of the varying conceptions of what a junior high school really is, and because of lack of agreement as to how far reorganization must go before the school is to be credited with the name. The whole movement is much further advanced in some States than in others, and the larger cities are in advance of the smaller. Table 9 gives the number of junior high schools reported to the Bureau of Education, in 1924.

However, the table does not tell the whole story. Of the 32 cities of 70,000 to 100,000 population, 23 have adopted

TABLE 9. CITIES REPORTING JUNIOR HIGH SCHOOLS <sup>3</sup>

POPULATION	100,000 AND OVER	30,000 TO 100,000	10,000 TO 30,000
City school systems.....	68	186	516
Reporting junior high schools....	30	66	117
Number of junior high schools ...	176	177	157

the junior-high-school organization. A similar step has been taken by all but 10 of the 68 cities of 100,000 or more population, although much remains to be done before reorganization is complete. The 58 large cities which have reorganized contain something over 20 per cent of the total population of the Nation.<sup>4</sup> A sidelight upon the gain made by the junior high school is given by the proportionate increase in the number of teachers engaged in this division of the school system. In 1924 the number of public high-school teachers, as reported to the Bureau of Education, was 34 per cent greater than in 1920. In the same period the number of junior-high-school teachers increased 134 per cent.<sup>5</sup>

**Reorganization of secondary education not complete.** The immediate task of those charged with the responsibility of the schools is completion of reorganization now going on. The central problem is the curriculum, and the center of activity is the junior high school. Leaders in elementary education have also been active, and the grades for which they are responsible have been greatly improved. Similarly,

<sup>3</sup> *Bur. of Educ. Bull.* (1924), no. 4, p. 2.

<sup>4</sup> Glass, J. M. *Sch. Rev.* (1924), 32:598-602; Glass, J. M. National Association of Secondary-School Principals, *Ninth Yearbook* (1925), pp. 171 ff.

<sup>5</sup> Computed from figures given in *Bur. of Educ. Bull.* (1925), no. 40, pp. 2, 4.

the influence has been felt, although to a lesser degree, in the upper years of the secondary school.

The initial stages of reorganization have been passed. Students of American education are in substantial agreement upon matters of general policy, although differences prevail with reference to details. These will be gradually overcome as the results of experimentation and experiences become available. However, much remains to be done. For example, the large majority of secondary schools as yet lay no claim to a junior-high-school organization. It is, of course, well understood that a rearrangement of administrative machinery does not comprise reorganization. It does comprise one of the initial steps. The bulk of the detailed work remains to be done, and it is to this task that administrators and teachers must devote themselves.

Unfortunately, some school officials show little inclination to have a part in the movement. Whether it is because of their conservatism, dislike of effort, lack of clear comprehension of fundamental educational principles, or because of a spirit of "let well enough alone," the result is the same. There are, on the other hand, many who would gladly begin a constructive program, but are held down by force of circumstances.

*First steps in reorganization.* The first step of the superintendent who would reorganize his school should be one of self-preparation. He should make a thorough study of the literature dealing with all phases of the subject, and acquaint himself with existing organizations elsewhere. Responsibility should be shared with the board, which in all probability will have to be educated up to the junior-high-school idea. School patrons should understand what is to be done and the reasons for doing it, not only because they tax themselves for the support of the school, but also because intelligence and interest on their part is necessary for efficient



service on the part of the school. Teachers should be interested, acquainted with the work they will have to do, and imbued with the spirit of study and investigation. Through his teachers' meetings, his school reports, the press, parent-teachers' associations, the commercial club, and kindred organizations the superintendent must carry out a well-planned campaign as the first step in junior-high-school reorganization.

*Obstacles to progress.* Perhaps the chief obstacle to progress is lack of funds, for reorganization entails additional expense. Boards of education are slow in making changes even when convinced of the desirability of modifying existing practices and when legal authority is clear, because they cannot move without funds, and appropriations depend finally upon public approval. If the item of cost were lacking, it is safe to say that progress would be much more rapid.

Another obstacle consists of existing legislation and official rules and regulations, not directed against reorganization but often making it difficult if not impossible. Many States, for example, provide additional funds for high-school purposes. In such States those in charge of the distribution of funds have sometimes refused, in the absence of a ruling from the attorney-general or special legislation, to turn over to local districts that proportion due the ninth grade when it is a part of the junior high school. To 1924, eighteen States passed laws permitting establishment of junior high schools. In twenty-two States existing statutes were such, in the minds of the state superintendents, as to make additional laws unnecessary; in eleven States, however, further legislation is reported as desirable.<sup>6</sup> Similarly, state superintendents, state boards of education, or state high-school accrediting agencies sometimes block progress through their standards or through over-conservatism or neglect.

<sup>6</sup> Terry, P. W., and Marquis, W. J. *Bur. of Educ. Bull.* (1924), no. 29.

Least progress has been made in small school systems. Superintendents in charge of them are most likely to show a non-progressive spirit. They are, moreover, more subject to rules and regulations imposed by state officials, from which large and populous school units are relatively free. Again, rural high schools often draw a third or more of their pupils from one- or two-room rural schools. The difficulty of accommodating these pupils in a six-year high school is at once apparent.

Finally, what may be termed the human element is especially strong in cities with permanent teaching personnel. Teachers of seventh and eighth grades, who have been for a number of years in service, are likely to see little gain in the work necessary to make their grades a part of a junior high school. If larger salaries are to be given to junior-high-school teachers, they foresee possible demotion for some of their number, perhaps themselves. This creates opposition. Elementary schools are more numerous than junior high schools can be, and principals who anticipate losing their seventh and eighth grades often protest. They prefer their present status to a condition which will relegate them to the principalship of a six-grade elementary school. Senior-high-school principals may not relish the thought of losing their ninth grades, not only because their schools become less influential than they otherwise might be, but because they really feel that the secondary school is and should be essentially a four-year institution. If reorganization is to proceed, it is plain that these attitudes must be overcome, not by coercion, but by education. As a matter of fact they are disappearing under skillful leadership.

**Articulation of the various units of the school system.** There is, of course, no guarantee that a junior-senior-high-school organization will in itself eliminate the breaks found

in the school system. When elementary, junior and senior high schools are placed in separate buildings, under different principals and under different groups of teachers, there is a strong possibility that two gaps will come into existence in place of the one found under the eight-four plan. Precisely this situation is not infrequently found. It can be overcome only by a clear consciousness of its causes and by consequent remedial steps.

Under the old plan, defective articulation between the eighth and ninth grades was caused primarily by a sudden introduction of new subjects, departmental teaching, new methods in instruction, different modes of discipline and lack of guidance. The whole atmosphere of the high school differed from that of the grades. Relations between pupil and teacher were more impersonal, and the pupil was thrown more upon his own responsibility. To permit these conditions to exist is to perpetuate an evil and to prohibit one of the reforms the junior high school was designed to accomplish.<sup>7</sup>

*The elementary and the junior high school.* Articulation of subject-matter between the junior high school and the elementary school offers no great difficulties. The greatest problem is in connection with departmentalization and methods of teaching which throw too much responsibility upon immature pupils. The remedy lies in a gradual change from the organization of the elementary grades to the organization suitable for upper secondary grades. A helpful device consists of providing advisers for groups of twenty to thirty, in which essentially the same relationships exist as are found between elementary teachers and their pupils. In the seventh grade, arrangements are sometimes made so that a pupil may attend at least two classes taught by his adviser.

<sup>7</sup> Cf. Inglis, A. J. *Principles of Secondary Education* (1918), pp. 277-81.

*Articulation of junior and senior high school.* Proper relationships can exist between junior and senior high schools only if there is articulation of courses, a comprehensive plan of guidance, and sympathetic, mutual understanding of purpose. It should be obvious that the primary function of the junior high school is not to prepare its pupils for the senior high school; its curriculum therefore cannot be dictated by the senior high school. To those in charge of instruction in the senior high school belongs the chief responsibility of articulating courses. Necessary changes should not prove undesirable, since the governing principles for curricular adjustments are not different from those influencing the revision of the junior-high-school program of studies. It is interesting to observe that principals of both schools testify to greater difficulty for pupils continuing foreign language and mathematics; and to less difficulty in articulation when the ninth grade, even when a part of the junior high school, has experienced little modification.<sup>8</sup> This supports the statement made above, that the senior high school has been little affected by the demand for curriculum revision or by reforms in teaching method.

All of us become myopic when we stick closely to our own tasks and ignore those of others. Among teachers this causes mutual ignorance of the purposes of the school system and is one of the greatest obstacles to a unified school system. It follows that an understanding of the work others are trying to do will be one of the greatest aids toward correlating the different school units. Such understanding can come only through effort and study, which should not prove so distasteful as they sometimes seem to be.

A plan of guidance which will test a pupil's abilities and acquaint him with the lines of work open in the senior high school is the responsibility of those in charge of the junior

<sup>8</sup> Ferguson, A. W. *Sch. Rev.* (1923), 31: 540-46.

high school. Information should be placed in the hands of senior-high-school enrolling officers and coöperation should exist between the two schools so that the new entrant may have every chance in attacking his first task, that of making good in the senior high school.<sup>9</sup>

**Admission requirements.** The prime considerations for admission to the junior or to the senior high school should be the working ability of the pupils and instruction needed. These include the health of the pupil, his natural capacity and interests, the probable time to be devoted to school work, and previous preparation.

There is always a strong tendency to overemphasize "satisfactory completion" of preceding grades or courses when a pupil seeks admission to higher classes. That working ability depends upon preparatory training none will deny; however, the amount of dependence constitutes a question which cannot now be answered scientifically. Certain it is that working ability does not depend wholly upon time spent in school nor amount of information acquired, and it seems certain that the dependence is not so great as the average teacher is inclined to think. Success of irregularly promoted pupils in doing advanced work argues forcibly for a liberal policy in the matter of promotions.

*To the junior high school.* During the early years of the reorganization period pupils were admitted to the junior high school in a majority of cases only upon satisfactory completion of the work of the first six grades. That the junior high school cannot properly discharge its function of providing for individual differences of pupils unless it admits, and provides suitable instruction for, "all pupils who are in any respect so mature that they would derive more benefit from the secondary school than from the elementary

<sup>9</sup> For a description of the plan in operation in Berkeley, Cal., see Alltucker, M. M. *Sch. Rev.* (1924), 32:60-66.

school" is a point of view now entertained by a majority of those who have charge of administration. In accordance with this attitude, many junior high schools admit pupils before they complete the sixth grade. By far the most important condition for admission is over-age. It has become a policy in many places to transfer to the junior high school all mentally normal but retarded pupils who will within a year reach the legal age for leaving school. Other important factors in deciding promotions are probable ability to do the work required, recommendation of the superintendent or former teacher or principal, general level of intelligence, and individual needs.<sup>10</sup>

*To the senior high school.* There seems to be no reason against the same attitude toward transfer from the junior to the senior high school; on the contrary, the similar point of view should prevail because of the similarity of the situations. As a matter of fact, however, the senior high school has not developed as liberal a policy towards the junior high school as the latter has assumed toward the elementary school in the matter of admissions. At least a partial explanation of this difference is found in the failure of senior-high-school administrators and teachers to keep abreast of the general movement for reorganization of secondary education. All too often they feel little need for modification of their courses, and all too frequently they manifest little interest and understanding of pupils who are not academically minded. Deep-seated prejudices against the junior high school are not unknown.

**Grade organization.** The reader may have wondered why reorganization of the public school system means necessarily the abandonment of the eight-four plan. In other words, cannot the improvements asked by the ad-

<sup>10</sup> Cf. Davis, C. O. *Sch. Rev.* (1918), 26:324-36; Briggs, T. H. *The Junior High School* (1920), p. 104.



vocates of the junior high school be accomplished in a school system of eight elementary and four high-school grades? In answering this question it must be admitted that many of the needed reforms do not call specifically for a junior-high-school organization. There is nothing in the eight-four plan which precludes reorganization of the content of the curriculum, recognition of many of the principles recently contributed by educational psychology, or even "bridging the gap" between the eighth and ninth grades. It is generally believed, however, that these purposes are more likely to be accomplished through the junior-high-school organization, since they are set as definite goals. On the other hand, provisions for individual differences, including the processes of exploration and guidance, will probably not be made as well under the old plan as under the new. Essentially the same statement applies to the problem of recognizing the stage of social development of pupils. The central question is not, however, arrangement of grades. It is the inclusion of those educational principles which have been sufficiently tested to warrant acceptance in the system of education.

*The six-three-three plan.* In 1916, when the movement was beginning to spread rapidly, the six-two-four division was found most frequently in reorganized schools. This was because superintendents often found it impracticable, if not impossible, to make the complete change at once. The six-two-four division is to be regarded as merely a transitional stage. This is shown by the rapidity with which it was abandoned, and by statements of numerous superintendents that the six-three-three plan was really their objective. It is now found less frequently than formerly, and is almost always superseded within a very few years. Organizations embracing only the eighth, or the eighth and ninth grades, have also been temporary. A

five-three-three plan is sometimes found, usually in the South, in cities formerly having seven elementary and four high-school grades.

The six-three-three plan has practically national acceptance among public school superintendents. In contrast with the six-four-two, six-four-four, or six-six plans, its chief advantage lies in the fact that pupils are grouped more homogeneously as regards psychological and physiological development. Even so, the resulting classification of pupils into groups physiologically immature (elementary), maturing (junior high school), and mature (senior high school) is only approximate.

In many States the law releases the pupil from school at the age of fourteen. This coincides with the break between elementary and secondary education under the eight-four plan. It has therefore been urged that through the six-three-three arrangement some pupils will be induced to remain longer in school. If the pupil finds himself in a position where another year is necessary to complete a period or cycle of training, it is probable that he will be disposed to remain. This disposition should be strengthened, it is urged, by an introduction to subjects formerly regarded as belonging to the high school. Experience indicates to a considerable degree the justification of this argument. It will be evident, however, that no fundamental educational principle is here involved.

*The six-four-four plan.* The grades which are to comprise the junior high school cannot be properly decided upon without taking into account the years which are to be included in the elementary school, the senior high school, the junior college, and the university. We must have, moreover, a clear conception of the purposes of each unit of the educational system as exemplified by its curriculum and its relation to the remaining units of the public school

system. When grades seven, eight, and nine are ascribed to the junior high school, the first three of the remaining years are usually regarded as belonging to the senior high school, the next two to the junior college, and the remaining years to the university or graduate school. Cities possessing public junior colleges have, in general, organized them by superimposing the freshman and sophomore years of collegiate work upon that of the high school. This plan of organization was discussed at some length in Chapter III. Here it should be reaffirmed that a six-three-three-two division may not be the best division. It is certain that the work of the junior college and the senior high school needs revision to the end that articulation in subject-matter may be improved and overlapping of courses eliminated. If the junior college continues to develop, and if it is made a part of secondary education, as its advocates claim it should be made, a junior high school including grades seven to ten inclusive may prove desirable.

The tendency is to push the compulsory school attendance limit upward to the sixteenth birthday. Many pupils would, under these conditions, reach the tenth grade before fulfilling the compulsory requirements. There seems to be no valid reason for dividing their period of education. The work of the tenth grade as the beginning of the senior high school would probably differ considerably from the work offered in this grade as a part of the junior high school, especially if account is taken of those pupils who in all probability will drop out of school. This points to a junior high school comprised of grades seven, eight, nine, and ten.

**The problem of the small high school.** The small high school cannot compete with the large high school in excellence of work. It is handicapped by its restricted curriculum, by the type of teacher it must employ, and by the facilities it can offer for student activities.

The limited number of students makes necessary a smaller number of studies, for it is evident that a school with an enrollment of a hundred or fewer cannot differentiate its work in accordance with the interests and needs of its pupils. It might cost from thirty to fifty per cent more to change such a school from a one-curriculum to a two-curriculum basis. As it is, instruction is much more expensive in small than in large high schools. In general, the rule is that per capita cost increases as the size of the school decreases. Again, classes in many instances become so small as to render satisfactory work difficult, if not impossible.

The teaching staff of the small high school is inferior to that of the large high school, both in training and in experience. It consists to a considerable degree of teachers who have just finished college, or those who have been unsuccessful in securing positions in larger school systems. The small school asks its teachers to give instruction in an almost incredibly large number of subjects, so that the young teacher who is not called upon to teach a subject in which he has had no academic preparation is fortunate indeed. The large high schools, on the other hand, are able to differentiate their work and to assign a teacher to a single field of instruction. Since a position in a large school is more desirable from every standpoint, including salary, the city is able to select, from a large number of applicants who have had their initial experience in small schools, those best prepared and most successful. The small high school is thus made a training ground and recruiting field of the large.<sup>11</sup>

The small high school is greatly handicapped in its student-activities program. This is particularly true of athletics, for often an insufficient number of boys is enrolled to form a team. Class organizations can, of course, be maintained after a fashion, but clubs and other activities

<sup>11</sup> Douglass, A. A. *Sch. and Soc.* (1921), 13:602-06.

which provide for special interests of pupils are maintained with difficulty. A school paper, a class yearbook, dramatics, and the like are almost impossible.

In recapitulation, boys and girls who must attend a small high school do not get as good an education as those fortunate enough to be able to attend a city high school. Their interest is blunted because they have no choice of work, their teachers are inexperienced and change year by year, and students are not held to high standards of endeavor. Many of these faults could be remedied through consolidation. The larger schools would make possible greater differentiation of work, a greater tax unit would provide more ample funds, better equipment could be provided, and better teachers would be secured.

*The four-year junior high school.* In the survey of education in Vermont, small schools were urged to give up the last two years and to consolidate the seventh and eighth grades and the first two years of the high school into a compact, closely articulated unit — in short, into a four-year junior high school. It was further recommended that central senior high schools might then be organized in large districts, open to, and designed for, the needs of the pupils in the entire district.<sup>12</sup> These recommendations have been followed, evidently with great success. A somewhat similar policy is in operation in Pennsylvania.

*The six-year secondary school.* Small school systems with an insufficient number of pupils to warrant a junior (as distinct from a senior) high school are frequently organized upon a six-six basis. Economy through common use of building space, particularly laboratories, library, gymnasium, and auditorium, results through this arrangement. Again, it permits better adjustment of teaching schedules.

<sup>12</sup> *A Study of Education in Vermont.* Carnegie Foundation (1914), p. 100. See also Hillegas, M. B. *Teach. Coll. Record* (1918), 19:336-44.

In the small secondary school of half a dozen or fewer teachers, some will be asked to give instruction in an impossible number of subjects. This condition is relieved to a considerable degree when teachers are assigned work through grades seven to twelve. There seems to be a growing consensus of opinion that a school with fewer than 500 pupils in grades seven to twelve should be organized on a six-six basis.

Since the great majority of secondary schools in this country are small, it will be readily seen that the six-six plan is likely to become very prominent. Occasionally, moreover, this grouping of grades is preferred in larger centers. It probably reduces to a minimum the chance of a gap arising between the junior and senior schools, as has existed in the past between the eighth and ninth grades and which now is not infrequently found between the junior high school and the senior high school. There should be a closer coördination of subject-matter, and at no time should the pupil feel that he has completed a definite division of the school.

**Can the period of education be shortened?** To a considerable degree, the agitation to shorten the period of schooling has subsided. Economy of time has come to mean a better use of time rather than a shorter time. Better use of time will result, it is urged, through making definite the objectives of education, through better selection and organization of subject-matter, through better teaching, and through a better arrangement of the elements of the school environment. If the curriculum is truly enriched and if instruction is made so efficient that each pupil is kept learning at his maximum rate, the economy of time problem will have been met, at least to a considerable degree.

*The Kansas City experiment.* One of the most conclusive experiments going to show that the whole period of schooling can be shortened is the one carried on at Kansas City,



Missouri. For more than fifty years the elementary schools of that city have been organized on a seven-year basis. Measured by any or all of the standards which we are accustomed to apply in judging efficiency, the Kansas City schools seem to stand the test. Data have been collected to show that more pupils complete the elementary grades, more enter the high school from the elementary schools, more finish the high school, and that more high-school graduates enter college than is ordinarily the case. Judged by their performance on standardized tests, the pupils at any point in the grades or high school compare favorably with pupils in a twelve-grade system. Moreover, progress through the grades and high school is at a normal rate, and pupils trained in this school system acquit themselves well at college.

Economy has been effected largely through compressing the work in the elementary grades, and through efficient planning of the courses of study. The Kansas City school authorities believed that the courses through grades nine to fourteen may be similarly compressed, without loss to the student. Such an organization would be essentially the same as the original economy-of-time program.<sup>13</sup>

*The eleven-grade schools of the South.* Many schoolmen of the Southern States, where the majority of the schools consist of seven elementary and four high-school years, do not favor prolonging the time to twelve years. An investigation of the records of freshmen in all the collegiate institutions which the high-school graduates entered showed no appreciable difference between those coming from eleven-year schools and those from twelve-year schools. The statistics covered a period of six years, and included nearly

<sup>13</sup> Melcher, G. Time Required to Complete an Elementary School Course. *Bull. of the Dep't of Elem. Sch. Principals, N.E.A.* (1924), vol. 3, no. 3.

thirty-three thousand cases. The colleges and universities attended were located in the North as well as in the South. In the interest of economy, it is urged that the eleven-grade system be retained.<sup>14</sup>

**Reorganization and the financial problem.** The importance of the financial aspects of school administration should lead every citizen, and especially every teacher, to acquaint himself with its most important problems. This subject cannot be dealt with in detail here; space will be taken only to indicate in a general way the chief sources of funds for secondary schools, and the importance of the financial problem to the program which calls for a national system of tax-supported secondary schools.

*Sources of funds for secondary schools.* Practically all public secondary schools receive a share of public school funds of the State in which they are located. In general, this fund is gained from two sources: interest accruing from the "permanent school fund," derived from the sale of land and other properties which have been granted to the State for the support of common schools, and from other sources; and a general tax upon the property of the State. From census reports and school records officials are able to calculate the total amount which will be needed. Money is apportioned to the several schools usually upon a per pupil or per teacher basis, or both. Because of the high cost of secondary education in comparison with elementary education, high schools are often allowed a larger share of the state funds. In one State, for example, high-school pupils are counted one and one half times in apportioning funds. Amounts to secondary schools of course vary greatly in the different States. County funds, raised by a tax upon the property of the county and apportioned to the several secondary schools, are also found. In some instances cer-

<sup>14</sup> *High School Quarterly* (1926), 14:68-70.

tain funds are collected, over and above the general fund, for exclusive use of high schools.

To encourage a special line of work, such as manual training, home economics, or industrial education, some States have made special grants. These are usually contingent upon sufficient appropriation by the local district to make it possible for the work to be properly done. The State usually judges whether or not such is the case. Smith-Hughes funds are distributed in essentially the same way.

Fees received from non-resident pupils comprise a sizable portion of the income in many high schools. If a student comes from a district that maintains no high school, the authorities of the school he does attend may draw a correspondingly increased apportionment of state and county funds, and collect the remainder from the pupil's home district, or it may receive reimbursement through other methods. If the student comes from a district or town maintaining a high school, he must, as a rule, pay tuition.

The superintendent will be able to determine quite definitely the total amount which will be received from the above-mentioned sources. The remainder of his school budget will, in general, have to be raised by a tax levied upon the property of the town or school district. In the majority of cases, more money must be raised through local taxation than is received from all other sources. Many different arrangements exist for actually levying the tax. Often a levy up to a certain amount is made at the discretion of the proper authorities, which in some States may be increased if submitted to the electors of the district.

A school district with a small amount of wealth per capita often finds it impossible to maintain good schools. On the other hand, wealthy districts have ample funds, even with a very small local tax. If a boy is so unfortunate as to

live in the poor district, he has poor educational advantages; if, however, he is so fortunate as to live in the rich district, he has access to excellent schools. The injustice of these conditions does not require elaboration. The remedy for the situation lies in a larger tax unit.

*Proportions of municipal funds devoted to schools.* In Table 10 is shown the percentage of all expenditures of all

TABLE 10. PERCENTAGES OF MUNICIPAL FUNDS DEVOTED TO SCHOOLS <sup>15</sup>

POPULATION	NO. OF CITIES	MEDIAN	MAXIMUM	MINIMUM
500,000 and over..	9	30	Los Angeles..... 40	Philadelphia.... 24
300,000-500,000..	6	32	Minneapolis..... 39	New Orleans.... 27
100,000-300,000..	36	37	Kansas City, Ks.... 54	Memphis..... 26
50,000-100,000..	56	44	Huntington, W.Va.. 62	Charleston, S.C.. 22
30,000- 50,000..	67	43	Oak Park, Ill..... 62	Columbus, Ga... 25

municipal departments in 1920 or 1921 which was devoted to current expenses of public schools. Capital outlays are not included. It will be noticed that some cities spend a much larger proportion of their funds for school purposes than do other cities, and that the proportion becomes progressively larger as the cities become smaller. In cities of less population than those shown in the table, average expenditure for schools consumes an even greater percentage of municipal funds. In communities of a few thousand it is usually well over fifty per cent.

*The high cost of secondary education.* Tables 11 and 12 show how school funds are expended. The elementary school receives the bulk of the school budget, because it contains the largest number of pupils. Cost per pupil becomes greater with length of stay in school. The difference between per pupil cost in elementary and in secondary schools is particularly noticeable and is due to higher

<sup>15</sup> *Bur. of Educ.*, no. 4, December, 1922.

salaries to teachers, more elaborate buildings and equipment, and perhaps to smaller classes in the secondary school. Whether or not it is just to spend so much more upon high-school students is a question open to debate.

Continuation and special schools are costly when calculation is based upon a per pupil basis, although they receive a small part of the total budget. Laboratory, shop, and industrial courses are likely to be much more expensive than the academic subjects.

TABLE 11. CURRENT EXPENSES PER STUDENT IN AVERAGE DAILY ATTENDANCE IN 195 CITY SCHOOL SYSTEMS <sup>16</sup>

POPULATION	NO. OF CITIES	LOWEST EXPENSE	AVERAGE EXPENSE	HIGHEST EXPENSE
100,000 and over..	35	Nashville, Tenn. \$35.74	\$95.64	Buffalo, N.Y.....\$133.32
30,000 to 100,000	55	Savannah, Ga. . 35.52	87.12	Fort Wayne, Ind. 125.05
10,000 to 30,000	55	Rome, Ga..... 24.00	73.90	Santa Cruz, Cal... 110.85
2,500 to 10,000	50	Albany, Ala..... 34.25	77.39	Goshen, Ind..... 194.11

TABLE 12. COST PER PUPIL IN DIFFERENT ENTERPRISES OF SCHOOL SYSTEMS OF ILLINOIS CITIES <sup>17</sup>

ENTERPRISE	PEORIA	OAK PARK	JOLIET	BLOOM-INGTON	CANTON	DECATUR
Entire system.....	\$85.75	\$102.71	\$97.30	\$75.93	\$55.87	\$66.34
Junior college.....	....	....	200.21	....	....	....
Senior high.....	....	....	....	....	....	105.90
Four-year high.....	126.13	165.23	172.42	109.37	74.98	....
Junior high.....	....	....	....	....	....	90.23
Elementary.....	76.71	80.81	78.52	65.02	47.31	52.12
Kindergarten.....	58.20	61.75	....	61.93	....	....
Continuation.....	212.36	....	379.49	191.43	....	....
Special school.....	195.21	....	137.62	187.30	59.13	....
Evening school.....	66.66	....	55.64	....	....	25.68
Fresh air.....	101.09	....	....	....	....	....
Ungraded.....	....	....	123.56	....	....	144.05
Summer.....	59.36	....	99.75	....	....	93.69

<sup>16</sup> Bur. of Educ., *Statistical Circular*, no. 4, March, 1925.

<sup>17</sup> Henry, N. B. *A Study of Public School Costs in Illinois Cities*. Report of the Educational Finance Inquiry Commission (1924), vol. 12, p. 43.

*Can the Nation finance its educational program?* America has spent larger and larger sums upon her secondary schools, until the problem of financial support has become acute. Some there are who think the time has come to call a halt in the expansion of the curriculum. This view is elaborated in the following quotation:

Assuming that the impending financial scrutiny provides an occasion for a reëxamination of our educational system to the end that the public system of education, including both tax-supported and endowed schools, may serve the true interests of the youth of the country and therefore the country itself, I venture to call attention again to the specific proposals advanced in the last Report of the Carnegie Foundation.

1. The total cost of public education has grown rapidly in the last two decades, and many communities, in view of the rapid rise in taxation, will find increasing difficulty in meeting this cost if it is to rise at a corresponding rate in the future.

2. The increase in the cost of education has come about not only through the growth of population and the corresponding increase in the number of students, but it has arisen in large measure by the addition to the curriculum of a great number of subjects and activities. The high-school course of twenty years ago, for example, was of a simple cultural type. It now includes somewhere everything from typewriting to journalism.

3. The outcome of this process of expansion has been, not merely to add many new facilities, but to transform our conception of what the school can accomplish in behalf of civilization. In the process the disciplinary side of education has been almost lost, and the education offered in the school has become soft.

4. The great rush of numbers into our schools has been due to many causes, but in no small measure to an unsatisfied vocational impulse. The kind of vocational training, however, that the bulk of these young people need is not that given in the high school, but a sharp technical training such as would be given in a trade school.

5. The process of expansion has resulted in a regrettable dilution in the scale of pay of the teacher. The pay of the teacher in the tax-supported school can be on a fair scale only when the school accepts a definite field of activity within which it will do its work.<sup>18</sup>

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<sup>18</sup> The Carnegie Foundation for the Advancement of Teaching, *Eighteenth*



*Disagreement regarding the Nation's ability to pay.* Such statements as the above usually elicit prompt response. The gist of the counter-argument is to the effect that the Nation is able to pay.

1. The cost of all public elementary and secondary schools in 1920 was four tenths of one per cent of the Nation's wealth.

2. The cost of all public elementary and secondary schools in 1920 was one and five tenths per cent of the Nation's income in 1919 and one and four tenths per cent of the Nation's income in 1920.

3. The cost of all public elementary and secondary schools in 1920 was less than seven per cent of the amount of money lying in the "savings accounts" of the banks of the Nation in 1921, a year when the recent business depression was most acute.

4. The Nation in 1920 spent seventeen dollars for luxuries for every dollar that it spent for education.

5. In 1920 the Nation spent eight and one half dollars for other forms of public service for every dollar it spent for public elementary and secondary schools.

If the expenditure of a billion dollars for education sorely taxes the resources of a Nation that finds it possible to expend seventeen billions for luxuries and nine billions for other forms of public service, then the statements of the Carnegie Report are justified; if not, they are unjustified.

6. The schools cost a half billion in 1913 and a billion in 1920. This does not mean that the percentage of the Nation's income devoted to the provision of schools in 1920 was twice what it was in 1913. Most of the apparent increase was fictitious rather than real. It may be said "that all of the extraordinary gains in money costs of the schools after the United States entered the War were due to fluctuations in prices" and that the apparent increase in school expenditures in this period is "an illusion so far as the current consumption of serviceable goods is concerned."<sup>19</sup>

*A different system of taxation suggested.* One who believes

*Annual Report of the President and Treasurer (1923), p. 73. See also the 1922 Report, pp. 93-117.*

<sup>19</sup> Summarized from *Research Bulletin of the N.E.A.* (1923), vol. 1, no. 2, pp. 70-73.

in the efficacy of education in promoting social progress is likely to incline toward the belief that the people of this country are able to finance the program of education. At the same time he will realize the importance of the financial question. The increasing scope of education, and the fact that many forms, once supported wholly or in part from private resources, are now paid for by public taxation, have increased the cost enormously. On the other hand, the wealth of the Nation has also been greatly increased, but the method of taxation remains essentially the same as the one in force at the time when the amount of property a man possessed was the best index of his wealth. According to Seligman,<sup>20</sup> the remedies lie in a fiscal system which will tap the resources of the community according to the relative ability of individuals to pay. This involves taxation of individual incomes, business, and inheritances. Second, the State Government must supply a larger contribution to the communities for education, especially to impoverished communities unable to support good schools.

It is not only possible, but quite probable, that better expenditure of funds will result in financial economy. In 1926 a commission, headed by F. W. Ballou, was appointed to study this problem.

#### TOPICS FOR DISCUSSION AND INVESTIGATION

1. State the provisions of the proposed amendment to the Federal Constitution to regulate the conditions of work for children under eighteen years of age. Why was the amendment defeated?
2. Calculate the proportion of the total population in your locality or State served by school systems reorganized upon a junior-high-school basis.
3. Outline a plan of consolidating two or more school districts. Describe the organization of a high school in a consolidated district.
4. How may a superintendent or board of education convince patrons of the desirability of a change in the schools?

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<sup>20</sup> Seligman, E. R. A. *Educ. Ad. and Super.* (1922), 8:449-56.

5. Is the statement that we can spend more money for schools because we spend large sums for luxuries economically sound?
6. Examine the advertisements of private schools as they appear in the current magazines. What points are stressed?
7. What significance for secondary education is the fact that smaller percentages of graduates enter college now than thirty years ago?

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**PART II**  
**THE SECONDARY-SCHOOL PUPIL**





*Chap I J. J. J.*

## CHAPTER VII

### MENTAL AND PHYSICAL CHARACTERISTICS OF ADOLESCENCE

**A preview of Part II.** It is no longer necessary to urge the need of adapting education to the psychological characteristics of boys and girls. This thesis is generally admitted. It is necessary, however, to refine our knowledge of the intellectual, physical, emotional, and social traits of childhood and youth; it is also necessary to examine our practices to see if they accord with established laws. New knowledge often shows the inadequacy of old practices, and it almost always suggests modifications and experimentation in administration. Contributions to the science of psychology have been numerous and valuable. It is our purpose to examine the most important of these contributions, and to show how their recognition is affecting the economy of the secondary school.

The purpose of this chapter is to sketch the development that occurs during early adolescence, or from the time the boy or girl enters the adolescent period until the approximate age of eighteen. First, the time at which adolescence begins will be considered. Following this will occur descriptions of attendant physical, mental, instinctive and emotional changes.

Chapter VIII has for its theme individual differences. The traits in which pupils show marked differences from each other, and which are of importance to secondary education, will be described. Chapter IX, dealing with elimination from school, may be regarded as a continuation of the treatment of individual differences. Variation in length of

stay in school is outstanding among pupils no longer required by law to attend, and upon the ability to predict likelihood of stay depends to a great degree the organization of the curriculum. Therefore the rate of elimination and the causes motivating school leaving, which must be understood if remedial measures are to be taken, are discussed in some detail. The causes of elimination are by no means independent of the psychological traits possessed by boys and girls; rather, an understanding of the mental, social, and emotional characteristics of pupils is indispensable to an adequate conception of elimination.

Educational theory has long regarded the true educative process as one in which the mind of the educand is vigorously active and moving; not quiescent and dormant. Since Herbart it has been held that assimilation of a new idea occurs through the coalescence of the new idea with older ones. In other words, learning is active, and it is dependent upon breadth and richness of past experiences. The modern teacher, however, does not expect children to do the most effective work merely because they recognize a connection between the new datum of learning and something already known; he recognizes that it is necessary to show that new tasks are worth while because they concern the learner in a vital way. Thus is the learner motivated. The guidance movement has reëmphasized, in a forcible manner, these principles. It has also made other noteworthy contributions, among which have been the discovery of ways and means of arriving at individual differences, the accumulation of a vast amount of information dealing with the occupations, and the formulation of clearer ideas regarding the problems facing both the young person trying to find his place in industrial life and the one confronted with the task of selecting from the wide array of courses in secondary school and college.

Chapters X and XI have for their problem educational and vocational guidance. These topics are not separated because they are inherently the same. The main purposes of the discussion are to show the ways and means of arriving at pupil differences, together with the steps that may be taken in planning the curriculum of the secondary school and in guiding the students' efforts.

**The biological point of view.** Of far-reaching importance is the biological point of view in child study and adolescence, which holds that mental and physical growth are not haphazard, but follow definite laws. Normal, adult, human psychology is concerned with discovering the laws by which the mind operates, or by which behavior is controlled. It was formerly supposed that the child, somatically and psychically, is similar to the adult, only smaller — a miniature adult rather than an adult in embryo. The study of childhood has shown the falsity of this view, although it still has wide occurrence in the popular mind. One has but to imagine the appearance of an adult whose proportions are those of a young child to see that, physically, the child is not a miniature man. An adult so proportioned would have an extraordinarily large head, a long trunk and short limbs. Similar differences exist in the psychic realm. The development of a child's mental and physical capacities is subject to certain laws, and it is the function of the study of childhood and adolescence to discover them, so that we may better understand the nature of those we instruct. In no other way can educational administration and educational methods be made most effective.

**Sources of knowledge of youth.** Knowledge of young people may be gained from one's own remembrances of his childhood, from popular writers and cartoonists who depict the activities of childhood, from the scientific literature, and from direct observation.

*Adult remembrances.* Unless an adult remains more or less of a boy or a girl, he is likely to be mistaken in his remembrances. He grows away from them to such an extent that many believe it quite impossible for him really to recall his earlier thoughts and feelings. Hall calls childhood a "lost paradise." Around White's "Court of Boyville" is a high wall, so that adults may not enter. Some are much more successful than others in keeping fresh earlier memories, but an individual adult should remember that he is apt to be wrong if he judges the thoughts, feelings, and aspirations of secondary-school students by his own remembrances.

*Popular literature.* Many writers and cartoonists have been very successful in describing boy and girl nature. Although they do not deal with attention, memory, sense perception, or a description of the instincts, they do give an idea of how a child thinks, feels, and acts. Acquaintance with such literature affords a valuable supplement to the scientific writings of psychologists, who are more concerned with what they sometimes call the "higher mental processes" brought into play in the classroom than with a portrayal of the characteristic child as he responds to the aspects of his environment. The student of child nature should understand that not all popular writers and cartoonists correctly interpret the younger generation. Some obviously are concerned with entertaining an adult public. Nevertheless, the secondary-school teacher cannot afford to be without an acquaintance with this source of information on childhood.

*Scientific literature.* The first, and as yet the only, extensive treatment of adolescent psychology is G. Stanley Hall's *Adolescence*, published in 1904. The two volumes deal with a wide variety of subjects, touching almost every conceivable phase in the life and development of youth. The materials were gathered for the most part from two

sources — the literature which had been produced up to the time Hall wrote, and a large number of investigations, chiefly by the questionnaire method, conducted by Hall and his graduate students.

Hall's summary of the existing literature is exhaustive and complete. It includes not only the accounts of investigations dealing with adolescence, whatever the language in which they were published, but it also includes youthful characteristics portrayed by novelists and poets, anthropologists and ethnologists, and by historical writers upon education, religion, and philosophy. The questionnaire studies deal with almost every aspect of adolescence. The method was, briefly, to send lists of printed questions to a large number of people, asking about some phase of their own youth or about young people under their observation. The questionnaire method has been vigorously attacked, and the individual who is at all familiar with present methods of psychological investigation will recognize at once the dissimilarity between them and investigation by questionnaire. The latter at least provides a rough trip over the ground. Through his use of it, Hall certainly raised many questions which stimulated both disagreement and investigation.

The subject of adolescence is treated in this monumental work from the standpoint of its physical, instinctive, social, moral, and religious development rather than from the standpoint of mental or intellectual growth, although this is not neglected. As America's foremost exponent of recapitulation, Hall constantly makes applications of this theory in interpreting his results. It is with objections to such applications of the recapitulation theory, and to Hall's view of the rate of development at adolescence, that the reader is likely to be most familiar. Many phases of Hall's book have had little or no evaluation. Why this is the case it is

difficult to understand, since they often deal with topics vital in the control and guidance of youth.

This rather extended series of comments regarding Hall's *Adolescence* is made because of its great historical importance, as well as for its content. The book called attention in a forcible way to the characteristics of youth and to the necessity of adapting educational practice to these characteristics. A conception of the historical importance of *Adolescence* should help in understanding one of the phases in the development of the secondary school. No such body of information was available when the Committee of Ten issued its Report, and it is thus not surprising that their recommendations were in many instances out of accord with the psychology of adolescence.

Remarkable advance has been made in all phases of psychology in twenty years, so there is little wonder that many of Hall's conclusions are no longer tenable, especially since they were so often influenced by data collected by means of the questionnaire. Yet the book is still a veritable mine of information. Care should be exercised, however, when one attempts to ascertain the meaning of many of the facts contained in it, for Hall's conclusions are often pressed too far, or perhaps distorted by his uniquely colorful expression. If, however, the book is really assimilated, the reader will find himself in possession of a genetic viewpoint of infinite value in studying youth.

The most important books and investigations since the appearance of Hall's *Adolescence* are listed in the bibliography at the end of this chapter. Experimentation in this field has hardly kept pace with that carried on in many other divisions of psychology. At present there is great need for investigation, as well as for a textbook which will bring together the knowledge now at hand.

*Direct observation and study.* When all is said and done,



the teacher will do well to check the knowledge he gains from other sources with his own observations of pupils. Of course this knowledge should be as broad as possible, for it will suggest methods of procedure and will give meaning to observations and study of children. If personal study can be blended with kindness and sympathy, the teacher's influence will be greatly strengthened. Science is not unkind, but it is impersonal. In applying his scientific knowledge of psychology to his school problems, the teacher will do well to remember that personal interest and sympathy are indispensable.

**Time of onset of adolescence.** For our most accurate knowledge of the time of onset of the pubertal period, we are indebted to two investigators, C. Ward Crampton and Bird T. Baldwin, each of whom has made thousands of measurements and observations. The latter investigator, particularly, has studied the same children over a period of years.

As will be seen from the accompanying tables, no exact time can be taken for the advent of puberty. The age of thirteen is most frequently given for girls and fourteen for boys, yet it may normally occur much earlier or much later than either of these ages. As Baldwin remarks,<sup>1</sup> normal children may be of the same chronological age between ten and a half and sixteen and a half and differ from one to four or five years in physiological development. An average chronological age cannot be taken as the standard for pubescence; for this must be substituted a range of years.

*Factors influencing onset of puberty.* A number of factors

<sup>1</sup> Baldwin, B. T. *Physical Growth of Children from Birth to Maturity* (1921), p. 191. A very extensive study of mental and physical growth, involving several thousand children and extending over a period of years, is being conducted by Professor W. F. Dearborn and his colleagues at the Graduate School of Education, Harvard University.

are operative in hastening or delaying this phenomenon. Children of one race may enter upon the period of adolescence earlier than those of another; and climate has been thought to be a determining factor. Studies made in Russia, Germany, England, and America demonstrate the fact that children from the so-called higher social strata mature earlier than children from the poorer classes. In this connection, good hygienic conditions, proper food, and health are favorable to growth and development. Country children, both boys and girls, mature somewhat earlier than city children. Children who are taller and heavier than the average arrive at puberty earlier. All growth curves show that girls have their period of accelerated development about two years earlier than boys, and investigators agree that girls mature from a year to two years earlier.

*Criteria for judging post-pubescence.* For our purposes, it is unnecessary to describe the technical standards used for determining pubescence, or to do more than mention the fact that new standards of observation are in the process of formulation, which may modify some of the results heretofore obtained. It is in point, however, to describe the characteristics of boys and girls who are post-pubescent, for these afford a basis for rough judgments of pupils.

Height and weight seem to be fairly reliable criteria by which the degree of maturity may be judged. Foster,<sup>2</sup> for instance, believes height alone may be used as a standard for classification according to physiological age, and Baldwin<sup>3</sup> thinks height and weight appear to offer excellent objective standards for determining maturity for both boys and girls. Crampton, who has done extensive work in this field, when classifying boys with whom it was inconvenient to employ

<sup>2</sup> Foster, W. L. *Psych. Clinic* (1910), 4: 83-88.

<sup>3</sup> Baldwin, B. T. *Bur. of Educ. Bull.* (1914), no. 10, p. 67.

TABLE 13. RELATION OF PUBESCENCE TO AGE IN 4800 BOYS <sup>4</sup>

AGE	PRE-PUBESCENT (per cent)	PUBESCENT (per cent)	POST-PUBESCENT (per cent)
12.25	..	..	..
12.75	69	25	6
13.25	55	26	18
13.75	41	28	31
14.25	26	28	46
14.75	16	24	60
15.25	9	20	70
15.75	5	10	85
16.25	2	4	93
16.75	1	4	95
17.25	0	2	98
17.75	0	0	100

TABLE 14. RELATION OF PUBESCENCE TO AGE IN 1241 GIRLS <sup>5</sup>

AGE	PRE-PUBESCENT (per cent)	PUBESCENT (per cent)	POST-PUBESCENT (per cent)
10.0	100.00	0.00	0.00
10.5	93.75	6.25	0.00
11.0	100.00	0.00	0.00
11.5	78.84	19.23	1.92
12.0	62.06	37.93	0.00
12.5	58.20	23.88	17.91
13.0	39.53	34.88	25.58
13.5	15.15	37.87	46.96
14.0	15.38	38.46	46.15
14.5	4.83	17.74	77.42
15.0	0.00	14.54	85.45
15.5	1.55	7.81	90.62
16.0	2.04	6.12	91.83
16.5	0.00	3.17	96.83
17.0	0.00	0.00	100.00

the method of direct examination, used the following procedure: <sup>6</sup>

<sup>4</sup> Crampton, C. W. *Ped. Sem.* (1908), 15:230-37.

<sup>5</sup> Baldwin, B. T. *Fifteenth Yearbook* (1916), part 1, pp. 11-12.

<sup>6</sup> Crampton, C. W. "The Significance of Physiological Age in Education"; in *Int. Cong. on Hyg. and Demog.* (1912), 3:224-36.

The boys formed a line and passed in review, each stating his age to the examiner. He was then given a number — one was most mature, five least. The following signs were noted: The voice (changed and low or unchanged and high); the presence of the second molars; height and weight; the subcutaneous fat of the face and hands. In the immature the subcutaneous fat is more evident and adheres closely to the skin, which is of finer texture; in the mature the skin is firmer and thicker, less attached to subcutaneous tissues, which contain less fat. The pre-pubescent is chubby, the post-pubescent may be fat, but there is an easily recognizable difference. . . . The principal of the school, after witnessing the classification of three classes, designated the gradings for twenty boys, eighteen of which were correct and two varied but one step.

The voice, facial expression, and general bodily contour are also usable standards for judging the degree of physical maturity. When the boy's voice undergoes mutation, it descends an octave and is much different in quality; the girl's voice descends a note or two and is likewise of a different quality. In both sexes there are changes in facial expression and an augmentation in the length and width of the skull. Some assert that racial characteristics become much more prominent. With boys the loss of subcutaneous fat causes them to become lean looking; this change is not noticeable with girls. In boys the joints and points for muscular attachment become more prominent; in girls there is a marked development of the bust and pelvis.

**Physical growth.** In sketching the physical changes of adolescence, a general picture only can be presented by describing groups of children rather than individuals. In so doing, the significant factors of growth for a single child are quite likely to be obscured and error to result when comparisons are made between the growth status of a child and averages or norms derived from group measurements.

Group measurements show the rate of absolute growth to be greatest at the time of birth, decreasing rather rapidly

until the ninth year for girls and the eleventh for boys. With adolescence comes an increase in the rate of growth, and the maximum for boys is reached at about the age of fifteen. Girls attain their maximum growth rate about two years earlier. Growth rate soon begins to decrease, and it continues to do so more and more rapidly until the approximate age of twenty for males and seventeen for females. Growth in height, weight, lung capacity, and strength are closely interconnected. In general, however, the organs and parts of the body do not grow at an equal rate, but develop independently of each other.

*Growth of bones and muscles.* With the period of adolescent acceleration comes a great increase in the growth of bones and muscles. The change involves a lengthening, especially of long bones; a thickening, through the addition of new periosteal layers; a change in constitution and proportion; and an advance in the process of ossification. The muscles, which form 27.2 per cent of the weight of the body at the age of eight, grow proportionately more rapidly, so that at the age of sixteen they form 44.2 per cent of the bodily weight. Bones and muscles together form about 72 per cent of the weight of the adult, so that their increase is the chief factor in growth.

*The circulatory and respiratory systems.* Growth in bony tissue and in muscle, growth of other bodily structures, and probable changes in organs and functions, are accompanied by an extension of the circulatory system to meet the new demands placed upon it. There is, however, another important change, in that blood pressure is heightened. In the child, the heart is relatively smaller and the arteries relatively larger than in the adult, and hence the child's blood pressure is less. This has been cited in explanation of the well-known fact that a child is able to endure violent physical activity for a short time only, while the adult is capable of strenuous activity for a longer period.

At birth the relation of the heart to the arteries is as 25 to 20, at the beginning of puberty it is as 140 to 50, and in full maturity it is as 290 to 61. The capacity of the lungs increases noticeably during the period of adolescence, as is shown by chest measurements or by the spirometer. Measurements show that with girls the increase is most rapid from twelve to fourteen, and with boys from fourteen to sixteen. The rate of growth in both sexes then decreases until the final capacity is reached at the approximate age of twenty.

*The brain.* In weight, the brain grows little after seven or eight, and it perhaps completes its growth at the age of fourteen. Little is known of the inner development of the brain at this age. In this connection, the following quotation <sup>7</sup> is very suggestive:

The brain, unlike most of the bodily organs, does not increase much in weight at adolescence. However, the manifold alterations and augmentations in psychic life — the new instincts, feelings, ideals, motives, and the general ripening of intellectual grasp that make up the psychological picture of adolescence — point unmistakably to corresponding alterations in brain activity. These alterations may be in part the functional maturing of cells and tracts hitherto dormant, and in part the extension and ramification of the fiber processes of cells already mature, particularly in the “higher” association areas of the cortex. The one development would account for the awakening of new instinctive tendencies, the other for the enriching and elaboration of mentality in general.

*Variability in measurements.* Early adolescence has been cited as the period manifesting greatest variability in mental and physical traits. While this extreme statement has been questioned,<sup>8</sup> the importance and extent of individual de-

<sup>7</sup> Whipple, G. M. *In Principles of Secondary Education*, edited by Paul Monroe (1914), p. 257. Reprinted by permission of The Macmillan Company, publishers.

<sup>8</sup> Henmon, V. A. C., and Livingston, W. F. *Jour. of Educ. Psych.* (1922), 13: 17-29.



partures from the norm should be emphasized. Especially important here are the investigations made by Baldwin.<sup>9</sup> He shows that children may reach puberty at any time from ten to seventeen, and that great differences are exhibited in height, weight, chest girth, lung capacity, and strength.

From his data it is evident, also, that the adolescent acceleration may not be as marked in individual cases as it has customarily been described. This is particularly true with growth in height, which he finds to be so uniform that one may predict with a high degree of accuracy how tall a child will be at a later age. Careful study of individual growth records can but lead to the conclusion that each child is an individual problem, and that he must be so regarded either when his own stage of physical development is considered or when conditions are provided to influence his growth.

**Mental growth.** For some years there has been a controversy over the amount and nature of mental growth at adolescence. The saltatory theory, which holds that growth is by "leaps and bounds," has been subjected to many attacks. It has had few defenders, and it is doubtful if it has many adherents to-day. The view in most common acceptance holds that mental development is gradual, and that no great change occurs in a brief time.

The saltatory theory had its inception, at least in part, from the application of a well-recognized principle in psychology, namely, that mental and physical development go hand in hand. Much of the information regarding physical growth, which we now have at our disposal, was accumulated before extensive effort was put forth to determine the laws of mental growth during childhood and youth. Data on physical development show an increase in growth during adolescence of many of the bodily organs and parts; hence

<sup>9</sup> Baldwin, B. T. *The Physical Growth of Children from Birth to Maturity* (1921), chap. 5.

the inference that there is corresponding mental development. There can be no possible objection to this inference, particularly if it is held tentatively. However, reliance must be placed upon scientific investigation for its substantiation. While an exhaustive treatment of the investigations in this field cannot be made here, the main lines will be traced, so that the present status of our knowledge on the question may be indicated.

*Memory and reasoning.* The controversy has centered extensively upon the development of the abilities of memorizing and reasoning. One view has it that the period from seven or eight until ten or twelve is the "golden age" for memorizing; reasoning, on the other hand, is yet undeveloped and its growth is comparatively slow until the onset of adolescence. At this time, however, the capacities for logical reasoning and for abstract judgment and symbolism are heightened. As far as memory is concerned, less ability is shown than at preceding ages.

It is probably true that the retentive power of children is greater than that of adults. This function seems to improve until the approximate age of twelve, when both accuracy and ability in retention decline. In rapidity in memorizing, however, children are inferior to adults. Summarizing the differences between children and adults, "a child of ten would not learn so easily as an adult of thirty for an immediate test of memory, would forget more during the first twenty minutes following the memorizing, but would keep better to the next day or the next week whatever survived this first forgetting period. Whatever may be the factors that account for this difference, . . . the fact still remains that what one gets in childhood is more likely to remain than what is fixed at any other time in life."<sup>10</sup>

<sup>10</sup> From Norsworthy, N., and Whitley, M. T. *The Psychology of Childhood* (1918), pp. 132-33. Reprinted by permission of The Macmillan Company, publishers.

The vast majority, if not all, of recent, careful examinations of experimental evidence upon reasoning conclude that no sudden development is manifest at adolescence. On the contrary, it seems that there is a continuous, although sometimes an irregular, growth from early childhood until maturity. There are two possible reasons for denying the capacity for abstract reasoning to children and for crediting it to adolescents. Children's reasoning is often inaccurate, and their conclusions erroneous and even ludicrous, but their mistakes are probably due more to an absence of facts or to mistaken facts and to the lack of systematized habits of thinking than to differences in the reasoning process. It should not be assumed, therefore, that mistakes in reasoning are evidence of lack of reasoning. The tendency to credit adolescents with increased capacity in this respect probably comes in part from the nature of the questions which concern them. The child's problems are not the adult's problems, and hence the child's efforts at solving his difficulties are not always taken seriously. On account of the increased freedom allowed with increasing age, as well as a natural broadening of the mental horizon, the problems of the adolescent are much more similar to the adult's. Thus, the boy or girl of fifteen is credited with more reasoning ability.

*Development of the more specific mental traits.* A number of years ago, experimental psychologists spent much time and energy in the application of weight-lifting, reaction time, association, substitution, and similar tests. Technique was worked out in great detail, and tests were given to groups of adults and to groups of children of various ages. If there is a sudden growth at adolescence, it should be evident when the results of these tests are scrutinized. No sharp upward trend is noticeable, however. It seems that the mental traits so measured improve throughout the period of elementary and secondary education, and irregu-

larities in development are not confined to the early teens.<sup>11</sup>

Most of the data for the above conclusions about memory and reasoning, and for other mental traits measured by weight-lifting, association, and similar tests, are imperfect in one very important respect. They concern different groups of children for the various chronological ages. It would be much better if the same group could be studied for a period of years. In this way, individual curves of development could be plotted, and irregularities of development would be more in evidence. When the results of investigations dealing with so many different age groups are lumped together, irregularities which would be exhibited in individual records are likely to be almost obliterated. Many of the groups used in the reaction time, substitution, and other experiments contained small numbers, and there is little reason to believe that the children were unselected.

*Growth of general intelligence.* In attempting to answer the question as to whether or not significant changes occur in the development of general intelligence at adolescence, it will be helpful to consider the age at which adult mental stature is reached, or, in other words, the age beyond which no growth in native mental ability occurs. On this point there is considerable disagreement. Most psychologists place the age somewhere between thirteen and eighteen. Terman tentatively sets it at sixteen, and Dearborn gives the opinion that increments are not measurable by our present tests long after the age of fourteen or fifteen. Gifted children, however, continue to develop intellectually for some little time beyond the average period, while those

<sup>11</sup> See Inglis, A. J. *Principles of Secondary Education* (1918), chap. 2, especially pp. 35-39. Inglis compiles his tables from G. M. Whipple's *Manual of Mental and Physical Tests* (1914). See also Starch, D. *Educational Psychology* (1919), pp. 17-21.

whose native endowment is below average cease developing before this age.<sup>12</sup>

In commenting upon the age at which growth in native intelligence ceases, Dearborn says: <sup>13</sup>

We have been accustomed to think of the individual as developing until at least the infirmities of old age become apparent. And it is true that there may be a continuing increase in knowledge and in breadth of experience, but it appears that when the average adult is faced with numerous situations as new to him as to the fifteen-year-old, in which he has not had special training and experience, (and he cannot have had an extended acquaintance in all the possible specializations of human knowledge and experience) the general level of his performance is no better than the fourteen- or fifteen-year-old.

With respect to the problem as to whether or not significant mental changes occur during adolescence, it remains to state that, except for gifted children, it is limited to a period extending backward for three or four years from the age of fifteen — that is, provided the age of adult mental stature has been correctly located.

**Relation between mental and physical growth.** The relationship existing between mental and physical growth has been the problem of several comprehensive investigations. Most of these were made a number of years ago, before the extensive development of mental testing. The general method of procedure, simply stated, was to determine by physical measurements and observations the physiological age of the pupils, and to determine the relationship existing between this factor and success in school work. Some of these studies gave negative results; the majority of them, and particularly the more careful and the more recent ones,

<sup>12</sup> Dearborn, W. F. In *The Child: His Nature and Needs*, ed. by M. V. O'Shea (1924), p. 82.

<sup>13</sup> *Ibid.*, pp. 82-83. Reprinted by permission of The Children's Foundation, publishers.

showed that those boys and girls who were older physiologically did superior school work. From this the conclusion was drawn that they were likewise mentally accelerated. It was found, also, that boys and girls taller and heavier than the average reached the pubertal period earlier, and the inference was similarly adduced that they were mentally supe-

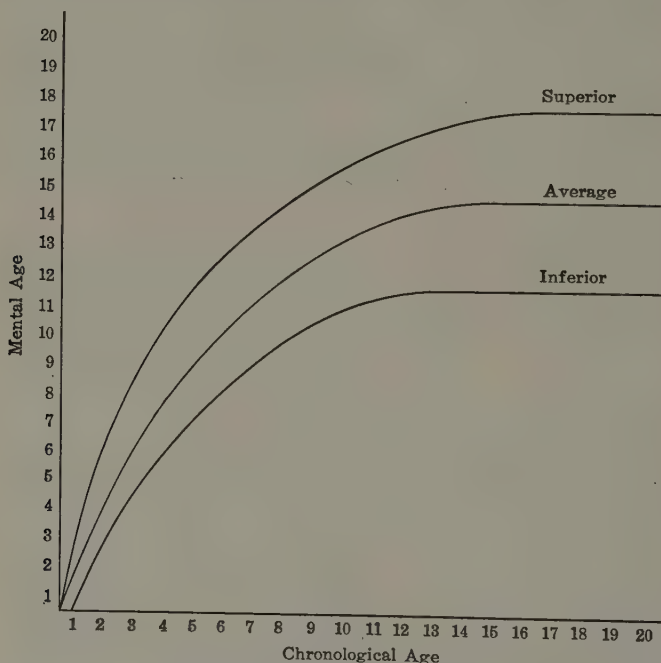


FIGURE 4. ADULT MENTAL AGE

(Dearborn, W. F. In *The Child: His Nature and Needs*, 1924, p. 82.)

rior. It will at once be evident that the nature of the data would make these conclusions tentative.<sup>14</sup>

Perhaps the most important evidence dealing with this

<sup>14</sup> See Baldwin, B. T. *Bur. of Educ. Bull.* (1914), no. 10,



whole question is that produced by Baldwin, who effected successive mental and physical measurements upon the same group of children over a period of years. It should be stated specifically that he determined mentality in terms of intelligence quotients — a much more scientific method than that of depending upon school progress or marks. Baldwin found mental growth curves to be strikingly similar to physical growth curves. The upward trend in the curve of mentality for girls begins to show especially marked changes between the ages of eleven and twelve; in the case of boys, acceleration occurs somewhat later. This adolescent superiority of girls accords with other known facts indicative of the earlier maturity of girls. Superior girls show their acceleration earlier than average girls, and the same is true in the case of superior and average boys. According to Baldwin, there is no time at which new mental traits suddenly appear, and the rise in the mental growth curves apparent at the ages of eleven to fourteen may be due to increased strength of traits that have long been developing, or to increased mental vigor similar to the accelerated growth in physical traits. He thinks, also, that mental age ratings “are the result not only of native intelligence, but also of the degree of physiological acceleration over that which is normal for the age.”<sup>15</sup>

This section of the discussion should not be concluded without some attempt at reconciling the diverse points of view. In such an attempt, the first step will be to point out the agreement among psychologists concerning the irregularities which may occur in the development of mentality. Specifically, it is not now held that the rate of mental growth is always even and regular. While this may be the general rule, individual exceptions often occur, and irregu-

<sup>15</sup> Baldwin, B. T., and Stecher, L. I. *Mental Growth Curve of Normal and Superior Children*. Univ. of Iowa Studies (1922), vol. 2, no. 1.

larities in the intelligence quotient occur with successive mental examinations. Our knowledge of the nature and causes for these exceptions will undoubtedly be greatly broadened in the near future, but at present such factors as illness, social isolation, and overstimulation by ambitious parents are thought to be operative. From Baldwin's data the conclusion is inevitable that one of these fluctuations occurs with the acceleration in physical growth at adolescence. That this is not more clearly shown in other studies may be because other investigators deal with a different group of children for each age. Their tables combine measurements of children of varying degrees of mental and physical development. This, coupled with variation in chronological age at which children reach physiological maturity, tends to destroy any characteristic age changes in intelligence.

The results of the pioneer experiments in weight-lifting, sensory discrimination, memory, association, etc., are not necessarily out of harmony with Baldwin's findings regarding increased mental development at adolescence. Mental age is determined by an individual's performance upon a number of tests, each of which may stress some particular mental function. Moreover, alternate tests are often given when the subject fails upon a regular test, and when the examiner judges that another chance should be given. The child does not often pass all of the tests of one year and then fail upon all those of the next — he may fail upon two or more located in, say, the ninth year, and pass two or three scattered through the tenth and eleventh years. In computing his mental age, all of the tests he passes are taken into account. Thus provision is made for irregularities in development and lack of opportunity for the acquisition of certain kinds of experience.

We may now state the chief conclusions derived from the foregoing discussion:

1. No new mental traits or processes emerge during adolescence.
2. Specific mental traits or processes improve throughout the periods of elementary and secondary education. Irregularities in development occur, however.
3. The level of general intelligence, which is measured by taking account of performance upon a number of specific tests, rises until the approximate age of fifteen, when adult mental stature is reached.
4. Growth in general intelligence may be irregular instead of uniform.
5. Dull children probably reach their maximum mental development before the chronological age of fifteen; bright children continue to develop subsequent to the age of fifteen.
6. An acceleration in general mental development occurs with the increased physical development at adolescence.

**Instinctive development.** For our purposes it is unnecessary to decide whether man has a number of instincts, as one school of psychologists contend, or whether this number should be reduced to three (fear, love, and anger), as the behaviorist is likely to hold. We are concerned, however, with tendencies characteristic of the adolescent period which condition the treatment given during the secondary-school period.

*The sex instinct.* Chief among these is the sex instinct, which ripens, as shown by the above tables, at the age of about thirteen and a half in girls and about fifteen in boys. The appearance of this instinct is not sudden — on the contrary, the best evidence shows that it has been slowly developing for some time.

Attraction toward the opposite sex is felt by most young people at about fifteen years of age. It is then that the phenomena of detumescence, which consist of specific sensations, muscular reflexes, and glandular secretions, are related to the phenomena of contrectation. The latter are mental, and include "thoughts of romance, the imagination, and the complex of motives and behavior that accompany being in

love." This stage of development is preceded by other stages, which seem to be fairly well marked.

Until the age of five or six, boys and girls play together almost indiscriminately. A boy shows little inclination to be interested in a girl because she is a girl, and *vice versa*. Such attractions as spring up are usually harmless, especially if free from the influence of older persons. This neutral period is followed by one which has been termed "undifferentiated." Contractation and detumescent phenomena are present to a degree, but normally are not connected in the child's mind. Great secretiveness may be manifested with respect to the juvenile "likings" of this age, and attachment may be felt for an older person. Toward the end of the developmental period, or at about the ages of eleven to fourteen, boys and girls seem to develop an aversion for each other's company. Boys choose other boys for their companions and friends, and play games from which girls are excluded. On the other hand, girls are quite content that boys should do so, for they have their own interests and prefer other girls for their associates.

The period during which adolescence is ushered in may be regarded as a developmental one. As stated above, there is at about the age of fifteen an association of the impulses of contractation and detumescence, and attraction is felt toward the opposite sex. To gain notice the boy (especially in his cruder stages) frequently has recourse to the demonstration of his physical powers, particularly in opposition to rivals, and in "showing off" in general. The girl more often assumes a coy attitude, and depends upon the decoration of her person and upon other means of display for attention. Both boys and girls begin to manifest a desire for each other's company. As every principal and teacher knows, they hold oral and written conversation in halls and classrooms, "crushes" develop, and the time has arrived for

parties and dances, with the anxieties they bring to parents and teachers, and the joys (and sometimes griefs) they hold in store for pupils.

The great importance of directing the sex impulse and the motives and interests springing from it are well recognized. On this point Bolton says:<sup>16</sup>

In general the higher the sex development, judged from the standpoint of true social or altruistic traits, the more the lower sex instincts have been brought under control and removed from consciousness. Irradiation of the lower into the higher channels of love, altruism, religion, etc., are the important objectives. The attention should be drawn away from direct sex emotions by activities, physical and mental, that shall develop what appear to be unrelated to sex, but in reality are intimately related to sex attraction and survival. The development of athletic prowess, bravery, chivalry, pride in dress, adornment, care of young, pride in family, skill in music and art, care for the weak or unfortunate, missionary zeal, religion, all are part of the psychic urge to develop and perpetuate one's own idealized life. They are all direct outgrowths of the parental instinct which in turn is directly related to sex.

Especially is there a need of fostering the right point of view with regard to the opposite sex and of cultivating proper habits in social affairs. One of the strong points in favor of our co-educational school system is that it contains great possibilities for the inculcation of the worthy ideals which one sex should entertain towards the other. Although the beginning was slow and although much yet remains to be done, the school is to be commended in its progress in this direction. Young people should be encouraged to consider their duties and responsibilities as members of family groups. Curricular activities touching upon home membership are confined largely to the development of the skills

<sup>16</sup> Bolton, F. E. In *The Child: His Nature and Needs*, ed. by M. V. O'Shea (1924), pp. 122-23. Reprinted by permission of The Children's Foundation, publishers.

needed in home-making, and limited almost entirely to girls. This is in itself desirable, but a great objective of sex education should be parenthood and family life in its highest relations.

In the minds of some writers, other instinctive characteristics of adolescence are closely connected with the sex instinct. The latter is the primary, the former, such as interest in adornment, widening consciousness of social relations, religious conversion and desire for travel, are secondary characters. Other writers are more inclined to list at least some of these independent instincts.

*Social tendencies.* From an early age the individual shows pleasure when in the company of others, particularly of his own age, and displeasure in solitude. At no time does it seem that the sensitiveness to the presence of others is keener than during the adolescent period. Youths desire to be members of social groups, and to participate in the activities of these groups. Adolescence has been described primarily as the period when the individual turns from the self-centered viewpoint of childhood to a viewpoint of himself in his relation to others, and this has been called the most characteristic as well as the most important aspect of adolescent development.

*Gregariousness.* The gregarious nature plays no small part in the formation of school morale or school spirit. It plays a strong part, also, in the origin of gangs, cliques, and fraternities. Taken with desire for approval and discomfort and pain at disapproval of the group, it is one of the most powerful of the means of determining behavior. Happy is the teacher or the principal who can make his rules and regulations coincide with the prevailing style or fashion among his pupils, or rather, so cultivate and influence his pupils that his rules are expressions of his students; unhappy the teacher or principal whose legislation is in direct opposi-



tion to modes of action which have the approval of the student body.

*Migratory tendencies and love of adventure.* The migratory tendency accounts in part for the restlessness of secondary-school students. Another contributing cause is the love of adventure, which is so characteristic of the age. Young people long to see new things, new places, and new people, and these are always more interesting when connected with highly exciting activity. The routine work of the school becomes burdensome, and interest in it may be lost. Many studies of elimination have shown that restlessness on the part of boys and girls plays no small part in their withdrawal from school. When this side of a pupil's nature is considered, teachers are more inclined to make the work of their classes interesting, and administrative authorities look with more favor upon field trips, school picnics and expeditions, walking clubs, camera clubs, and scout organizations.

**The emotions.** A close relationship between instinct and emotion is recognized by psychologists. Some go so far as to say that emotion is the conscious side of instinct, and lists of instincts are found alongside lists of the emotions, each of which is supposed to accompany a specific instinct. Thus, the emotion of fear accompanies flight; anger, the fighting instinct; and wonder goes along with curiosity. While it is too much to say that a given instinct is invariably followed by a specific emotion (for example, the fighting instinct may find expression without anger), the agreement is nevertheless close.

*Change in emotion and change in instinct.* On the basis of the close connection between instincts and emotions, a theory has been formulated to explain the more highly toned emotional life of adolescence. If emotion is the mental accompaniment of instinct, it follows that certain emotions increase in strength along with the ripening of corresponding

instincts. The joy coming from being a member of a clique or gang and in participating in its activities would be, and doubtless is, greater at fifteen than it was at ten or twelve. There might also be qualitative differences. Thwarting instinctive expression almost invariably results in displeasure, if not in anger. The chagrin or the rage felt by a youth of sixteen when his attempts at self-assertion are nipped in the bud would differ markedly from the feeling experienced under similar circumstances by a ten-year-old.

*Physiological basis for adolescent emotional changes.* There is also a physiological basis for the more intensive emotional life at adolescence. This basis is found in the increased muscular development which has already been mentioned, and in the development of the ductless glands. It should be pointed out that muscular, kinæsthetic, and organic sensations form a very important part of that stirred-up state of the organism called emotion. The secretions of the ductless glands, notably the adrenals, increase during emotional excitement and stimulate greatly both muscular and organic action. While knowledge of the ductless glands is imperfect, there can be no hesitation in saying that they exert influence upon specific aspects of bodily growth, are interdependent in their development, and undergo rapid growth during the early adolescent period. This is especially true of the gonads. Glandular and muscular growth thus give a physiological basis for intensified emotional life at adolescence.

*Strong emotion characteristic of adolescence.* A few further statements may aid in understanding the emotional life at adolescence. The youth is proverbially hot-headed. His convictions are unusually strong, more because they are felt intensely than because they have been formed as the result of much reasoning. It would be a mistake to assume, however, that his reactions are unmodified by experience.

Instinct is almost immediately changed by learning, and the point has been made above that it is the waxing of certain tendencies rather than their first appearance that typifies adolescence. The unstable character of the emotions of the youth is due to the psychological and physiological reasons just recited, and to the fact that his environment is expanding rapidly, bringing numerous new stimuli. The adult has experienced so many of these that his reactions have become habitual, and feelings are lessened as habits are stabilized. He has, moreover, established habits of emotional discharge. The adolescent, on the other hand, has much of this before him. He can therefore be expected to feel more thrills, greater excitement and elation, keener disappointment and deeper depression, than he will a decade or a score of years later.

**Youthful interests.** With his enriched instinctive and emotional life, his enlarged environment, and his unsettled habits, it is natural that the teens should be a period of intense, though often conflicting, interests. The average youth is an idealist, and to a considerable extent a dreamer. He is inconsistent, and mixes plans for uplifting oppressed humanity with acts that are unsocial and selfish. Yet he is loyal, and can be appealed to from the standpoint of justice and right.

As he grows older he thinks more seriously of a vocation, and tries to see the connection between what he is asked to learn in school and the world about him. Unless conscientious he is not usually an intellectual, if by that term is meant studentship for its own sake. But no one will gainsay the truth of the statement that childhood and youth are the periods for the development of new interests, and there is evidence to show that linguistic, scientific, musical, artistic, and literary interests — many of a fleeting, though some of a permanent nature — open during the secondary period.

Certainly the average young person is greatly concerned with his appearance, his mode of living, and with ways and means of amusement. Few are entirely free from serious thoughts concerning religious or social and moral matters. While no one would say that the intellect contributes nothing to the varied interests of this period, few would deny that the instinctive and emotional life contributes more, especially if the intellectual is conceived to deal exclusively with school subjects.

#### TOPICS FOR FURTHER INVESTIGATION

1. Explain, in some detail, the method of investigation by questionnaire. What are its merits and shortcomings?
2. What are the ages which various psychologists set for the attainment of "adult mental stature"? Upon what data do they base their conclusions?
3. Suppose that growth of general intelligence ceases at fifteen years of age (or thirteen or sixteen years of age). Does this mean that the individual is as capable at this age of undertaking a *new* subject, as perhaps geometry, as he will ever be?
4. Contrast two pupils of your acquaintance, of the same sex and chronological age but of different degrees of physical development, with respect to such characteristics as mode of dress, associates, scholarship, and interests.
5. Give an example of a style or fad, as in matters of dress, which swept through a school. How did the principal handle the matter?
6. Evaluate one or more popular books depicting the thoughts and feelings of boys or girls of high-school age.
7. On what grounds can it be concluded that, in general, mental and physical development go hand in hand?
8. Of what practical importance is it to the teacher or school administrator whether growth in general intelligence is accelerated at adolescence or not?
9. What is the present view with respect to saltatory development at adolescence?
10. Of what significance to the school administrator are the facts of physical growth at adolescence?

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## CHAPTER VIII

### INDIVIDUAL DIFFERENCES AMONG SECONDARY-SCHOOL PUPILS

**Important contributions from the psychology of individual differences.** It has long been known that people differ in ability, interests, habits, physical stature and strength, use of native tongue — in brief, in practically every conceivable trait. But it has been only within the last fifteen or twenty years that attempts have been made to isolate and measure objectively specific abilities, interests, or aptitudes, and to devise ways and means of adapting secondary education to individual differences in these traits in such a way as to insure maximum benefit to the individual and to society.

Three principles of far-reaching significance for secondary education may be generalized from the numerous investigations in the field of individual differences. The first of these concerns the range of abilities and accomplishments which will inevitably be found to exist in a class of unselected pupils; the second, the overlapping of abilities found among groups of pupils of supposedly different degrees of advancement; the third, the general way in which abilities and accomplishments are distributed. The significance of these principles in secondary-school administration will be brought out in this and succeeding chapters.

*Differences in school accomplishment.* First of all, teachers are struck by the differences which pupils show in quality and quantity of class work. One pupil is known as a good student, because each year he ranks high in all his classes; another is judged poor because he invariably receives failing or barely passing marks. Between these extremes all grades



and degrees of excellence are found. Such differences are the basis of our marking systems.

Although daily observation has impressed the teacher with the fact that pupils vary greatly in ability and in performance of school tasks, he has not been able to determine how great this variation may be. The application of stand-

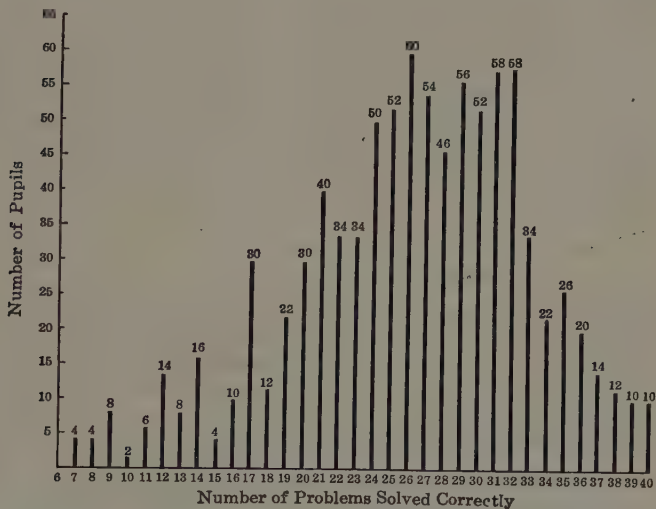


FIGURE 5. RANGE OF ABILITY IN ALGEBRA AMONG NINTH-GRADE PUPILS

(Douglass, H. R. *Univ. of Ore. Publication*, vol. 1, 1921, no. 8, pp. 27-28.)

ardized tests answers this question much more definitely than has heretofore been possible. It is now known that the ablest pupil in an unselected class of thirty will be able to solve five times as many algebra problems in a certain space of time as the poorest pupil. He will probably be able silently to read twice as many pages in ten minutes; and he is likely to have a vocabulary containing 50 to 100 per cent more words. Similar differences exist for practically every

ability that has been measured. This is illustrated in Figure 5.

One of the most important causes for differences in school accomplishment is found in the differences in ability to perform the tasks set by teachers. In testing 6188 seniors in the high schools of Indiana, Book found the median intelligence score for the entire group to be 137 points out of a possible 190. The total range of scores extended from 40 to 187 points, while the middle fifty per cent of the group made scores ranging from 124 to 148 points. Even in as highly selected a group as high-school seniors are supposed to be, great differences in ability are found to exist.

Table 15. PERCENTILE SCORES FOR SENIORS IN INDIANA HIGH SCHOOLS <sup>1</sup>

Percentile groups...	1	5	10	20	25	40	50	60	75	80	90	95	99	CASES
Score for total group	81	102	111	121	124	131	137	142	148	151	158	164	176	6188
Score for boys.....	80	102	112	122	126	134	139	143	150	153	160	165	177	2477
Score for girls.....	83	101	110	120	123	131	136	141	147	150	157	163	175	3711

Table reads as follows: of the total group, 10 per cent made scores of less than 111 points, 1 per cent made scores of 176 points or above, the middle 50 per cent (from 25 to 75 on the first line of the table) made scores from 124 to 148 points, etc.

Figure 6 shows the scores of fourteen- and fifteen-year-old pupils found in continuation and in regular schools, in five localities in Massachusetts. Under the Massachusetts law a boy or girl who drops out of school at the age of fourteen must attend continuation school until the age of sixteen. The curve thus includes the scores of practically all fourteen- and fifteen-year-old pupils in the communities in question. The impossibility of requiring pupils of the same chronological age to accomplish tasks similar in nature is clearly shown by the distribution of the scores.

*Overlapping of abilities.* Teachers and pupils feel that

<sup>1</sup> From Book, W. F. *The Intelligence of High School Seniors* (1922), p. 20. Reprinted by permission of The Macmillan Company, publishers.

passing from one grade to the next marks a definite step in advancement. Standardized tests, whose problems and exercises are arranged in accordance with difficulty and whose construction permits objective measurement, have

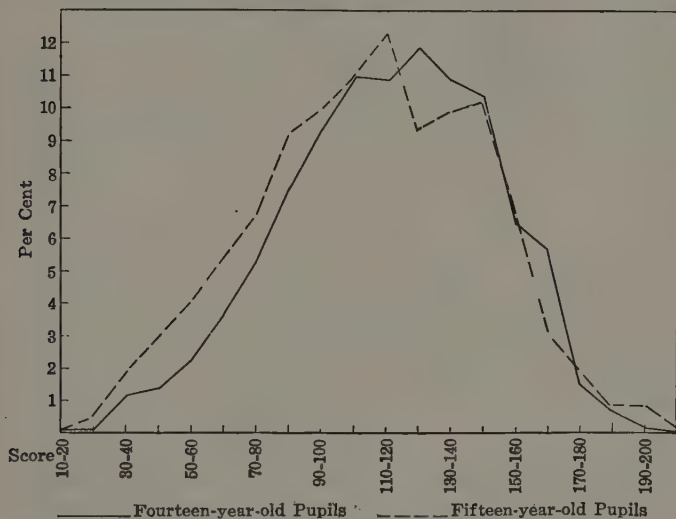


FIGURE 6. INTELLIGENCE TEST SCORES OF CONTINUATION AND REGULAR SCHOOL PUPILS COMBINED

(Drawn from data given by Hopkins, L. T. *The Intelligence of Continuation-School Children in Massachusetts, 1924*, p. 160.)

shown great overlapping of abilities of pupils in different grades. A sizable proportion of the pupils in one grade equals or exceeds the average ability of pupils in the next higher grade; a similar fraction is not superior to the average of the pupils in the grade below. Tests of general intelligence, when given in contiguous grades, show the same general results. The problem of administration raised by investigations of this question is obvious. While it is too much to hope that all overlapping may be prohibited, it is

certain that careful testing and classification will reduce very materially the usual amount, and will make the pupils in a given grade or a given class more homogeneous in ability. Figure 7 illustrates both the range of ability found in a single grade and the overlapping in contiguous grades.

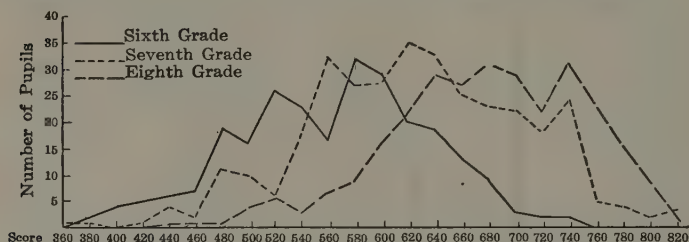


FIGURE 7. OVERLAPPING OF ABILITIES AMONG PUPILS OF GRADES SIX, SEVEN AND EIGHT

Curves drawn from composite scores including arithmetic, language, composition, reading, spelling, opposites, association, mixed relations, visual vocabulary, and directions. (Data from Kruse, P. J. *The Overlapping of Attainments in Certain Sixth, Seventh, and Eighth Grades*, 1918, p. 91.)

*The distribution of individual differences.* During the War a company of soldiers at full strength contained 256 men. One who observed such a company was probably struck by the fact that there were one or two squads composed of men considerably above the average in height, a similar number of squads made up of men as much below the average, while approximately half the company seemed to be about midway between. Those remaining fitted in between the men of average height and the tall men, or between the average and the short men. When measurements of height were taken, it was found that the differences were very small when each man was considered, going from the shortest to the tallest. If a curve of these measurements had been plotted, it would have been approximately the shape of a bell. This curve is known as the "curve of probability."

Biological and psychological measurements are distrib

uted in accordance with the curve of probability. At each chronological age, provided the number of cases is sufficiently large and the sampling is of the "average run," scores range without break from the lowest to the highest. The large majority of the measurements are grouped about the center, and they drop away at first rather gradually, then very rapidly, and finally very slowly. These conditions are approximated in Figures 5 and 6, while Figure 8 shows theoretically what we may expect if we plot a large number of scores made by unselected individuals.

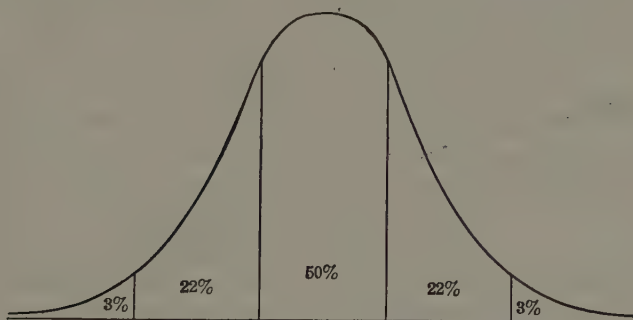


FIGURE 8. THE THEORETICAL PROBABILITY CURVE

It will be seen that the common practice of dividing individuals into groups of excellent, good, fair, or poor with respect to a given trait is not in accord with the facts, particularly when sharp lines of distinction are drawn between the groups. This statement holds with especial force in classifying pupils on the basis of mental traits, since such classification is likely to exert considerable influence in the treatment of the children. At each chronological age (provided the number of cases is sufficiently large for statistical treatment and no selective factor is at work), children of every degree of excellence are found. The number of in-

ferior children depends upon the standards set up for inferiority, the number of brilliant pupils depends upon the standards set up for brilliancy, and so on. Too much significance should therefore not be attached to such classifications as "average," "very superior," etc., for the facts show a continuous gradation from one extreme to the other, and not a distinct separation into classes. The general principles operate in all measurements of mental or physical traits.

**With what traits is secondary education most concerned?** Secondary education is obviously concerned with every capacity and every interest which conditions the well-rounded development of the individual, or which will help or hinder in adjusting the individual to community life. The number of such capacities and interests is legion. For our purposes, they will be grouped as far as possible under the following heads: differences in general intelligence, differences in physical traits, differences in social intelligence, differences in vocational interests, differences in traits due to family or racial-social heredity, and differences in moral qualities. These will be discussed in the remainder of the chapter, together with factors which seem to condition their appearance and extent.

Differences in general intelligence receive the most extended treatment. A reason for this is that it is probably the most important factor conditioning success in school work, as the school is now conducted. Another very practical reason is that intelligence and intelligence testing have received perhaps a disproportionate amount of the time and energy of educational psychologists and others. Knowledge in this field is therefore greater.

**Differences in general intelligence.** *Terminology.* From the performance on group or individual tests, general intelligence is determined. Several terms are used, the com-



monest ones being "chronological age," "mental age," and "intelligence quotient." Chronological age means simply the number of years, months, and days the child has lived. Mental age is determined by the location of the tests that the child passes, and indicates a certain amount of intelligence. It is customary to speak of a mental age of seven, eight, ten, etc. Each mental age represents the amount of intelligence possessed by a normal child of the same chronological age. To say that a child has a mental age of eight means that he is capable of doing and understanding the things that the normal eight-year-old child is capable of doing and understanding. If his chronological age is likewise eight, he is looked upon as having normal or average intelligence. If, however, his chronological age is ten and his mental age is eight, he is pronounced dull; if his chronological age is seven and his mental age eight, he is looked upon as having more than average intelligence.

While it is necessary to know the mental age, it will throw additional light upon the question of a child's general intelligence to compare him in this respect with the average or normal individual of the same chronological age. This is done by determining the ratio existing between mental age and real age, and this ratio is called the Intelligence Quotient, or I.Q. It is found by dividing the mental age, expressed in years and months, by chronological age, also expressed in years and months. If a child is eight years old mentally and eight years old chronologically, his intelligence quotient is 100 or normal; if his mental age is ten and his chronological age is eight, his intelligence quotient is 125, or considerably above normal.

*The nature of general intelligence.* According to the dictionary definition, "intelligence" may mean either the power of understanding, the intellect as endowment, the capacity to know or comprehend, mental acuteness; or know-

ledge, particular or general information, communicated information, news, notice, advice. Psychologists are inclined to use the term "intelligence" to mean knowledge, skill, information, and the like, which are acquired. "General intelligence," however, is used by this group of scientists to indicate native ability, natural brightness, or inborn capacity that determines the acquisition of intelligence or learning. Thus, only the capacity to become intelligent is inborn, while intelligence itself is acquired. "Intelligence tests" are designed to measure this inborn capacity to become intelligent. Synonymous terms are "mental tests" or "mentality tests," favored by some as indicating more clearly the quality measured.

According to Binet, the characteristics of general intelligence are "its tendency to take and maintain a definite direction; the capacity to make adaptations for the purpose of attaining a desired end; and the power of auto-criticism."<sup>2</sup> This conception of general intelligence has been somewhat modified by more recent workers in this field. It is variously conceived as being the "power of good responses from point of view of truth or fact," as the ability to carry on abstract thinking, or as the ability to adjust to the environment as determined by what an individual has learned or is able to learn.<sup>3</sup>

*General intelligence as a single capacity.* One theory, supported by an English school and by certain American psychologists, holds that general intelligence is unitary in character. It is a general common factor, which is possessed by each individual to a greater or less degree, and which manifests itself in approximately equal amounts in the various

<sup>2</sup> Quoted from Terman, L. M. *The Measurement of Intelligence* (1916), p. 45.

<sup>3</sup> "Intelligence and its Measurement; a Symposium"; in *Jour. of Educ. Psych.* (1921), 12: 124-47; 195-216; 271-75.

fields in which intelligence or learning is acquired. The possession of a high degree of this common quality makes all accomplishment easy, while possession of a smaller amount reduces capacity in any field. If a man's capacity in one respect is determined, we have, according to this theory, a close approximation to his capacity in all respects. When a single individual shows different degrees of aptitude for acquiring different kinds of intelligence, it is due to variations in opportunity encountered or to other inherited abilities.

In explaining the position of those who hold this theory, Colvin says: <sup>4</sup>

Specifically, if a child acts with great intelligence in his class in arithmetic and very stupidly in his class in music, this is not due to the fact that he had two kinds of innate intelligence, one for number and one for music, but rather to differences in opportunity to learn and interest in learning in these two fields, or to specific inborn capacities which in one instance favor the development of his general intelligence and in the other hinder this development. For example, no matter what the general intelligence of the child might be, he could hardly be expected to become highly intelligent in his work in music if he were born with a poor sense of rhythm and with an innate inability to distinguish between tones varying in pitch. In such a case his general intelligence would have little or no opportunity to manifest itself in the face of so specific an inborn handicap.

*General intelligence as a group of related capacities.* A second theory, which has many adherents, holds that general intelligence is a large number of related innate capacities to become intelligent in various environmental situations. The following quotation sets forth this view: <sup>5</sup>

<sup>4</sup> Colvin, S. S. *Twenty-First Yearbook* (1922), part 1, p. 13. National Society for the Study of Education.

<sup>5</sup> *Ibid.*, pp. 13-14.

... there are three main types of innate intelligence, namely, intelligence for words and abstract ideas; motor intelligence, or skill with the use of the hands, and social intelligence, or the ability to get on well with one's fellows. These three types are positively related, but not necessarily in a high degree. The first type concerns itself particularly with abilities necessary to get on in school and college in the ordinary academic courses and in the more abstract aspects of applied courses. The second type of ability concerns itself with the execution of skillful motor acts and the comprehension of mechanical construction and processes. The third type has to do with the understanding of one's fellows and with influencing and leading them. In order to be an excellent mathematician or classical student one must be "born long" in abstract intelligence; in order to handle tools deftly, to invent and design, one must have in considerable degree the second type of intelligence; in order to be a successful salesman or a social leader one must possess superiority in the third type of intelligence. Not only are there three main types of innate intelligences, but within these main types there are subdivisions. An intelligence test that surveys a person's general intelligence does not indicate in particular the various aspects of this intelligence.

*Relationship among mental capacities.* Which, if either, of the above theories of general intelligence will ultimately prevail cannot now be foretold. In support of the first theory we may note the fact that the results of different tests agree in showing that a close relationship exists between excellence in one desirable trait and excellence in all other desirable traits. In school work, high ability in one subject is rarely accompanied by absolute lack of ability in another subject; on the contrary, scholastic abilities are for the most part closely correlated. A pupil who does excellent work in history is quite likely to do excellent work in mathematics or in the shop. Expressing this statement in an everyday phrase, the person of one-sided development is the exception, the all-around man the rule. The theory which conceives general intelligence as a group of related factors recognizes this fact, however, and holds that the person with more than

average ability to handle abstract ideas is likely to possess more than average ability when it comes to physical or social adaptation.

In support of the second theory it may be pointed out that special abilities and disabilities do occur, and that they seem to run in families. This has been the conclusion of many investigators, beginning with Galton. Gates <sup>6</sup> points out that it is not always possible to remove special disabilities, such as those of spelling and arithmetic, even when the greatest care is taken. Moreover, when environment, training, and ability have been similar, we get similar special abilities. Second, correlations are higher between level of intelligence and such subjects as spelling, arithmetic, reading, and composition than between intelligence and drawing, writing, and handwork; conversely, children of low intelligence will more nearly equal the work of bright children in handwork, writing, and drawing than in spelling, reading, arithmetic, and composition. Finally, the relationship between intelligence and success in school work, as judged by available data, is higher than it is between intelligence and success in vocation or in social adaptability.

A further application of this theory of general intelligence to school work should be mentioned at this point, although it will be treated in more detail later. Investigators are attempting to search out the special abilities needed in the various lines of activity found in the secondary-school program. If there are such abilities it should be possible to measure them, and hence to predict with some degree of certainty the success a pupil will achieve in this or that line of endeavor.

*Elements in intelligent behavior.* Woodworth points out a number of general characteristics which an individual must possess if he achieves a high score upon an intelligence test.

<sup>6</sup> Gates, A. I. *Psychology for Students of Education* (1924), pp. 461 ff.

Lack of these characteristics will lead to a low score. These general factors he discusses, as follows: <sup>7</sup>

First, the tests evidently require the use of past experience. They call, not for instinctive reactions, but for previously learned reactions. Though the Binet tests attempt to steer clear of specific school knowledge, they do depend upon knowledge and skill picked up by the child in the course of his ordinary experience. They depend on the ability to learn and remember. One general factor in intelligence is therefore *retentiveness*.

But the tests do not usually call for simple memory of something previously learned. Rather, what has been previously learned must be applied, in the test, to a more or less novel problem. The subject is asked to do something a little different from anything he has previously done, but similar enough so that he can make use of what he has learned. He has to *see the point* of the problem now set him, and to *adapt* what he has learned to this novel situation. Perhaps "seeing the point" and "adapting oneself to a novel situation" are to be held apart as two separate general factors in intelligence, but on the whole it seems possible to include both under the general head, *responsiveness to relationships*, and to set up this characteristic as a second general factor in intelligence. . . .

Besides these two intellectual factors in intelligent behavior, there are certain moral or impulsive factors. One is *persistence*, which is probably the same thing as the mastery or self-assertive instinct. The individual who gives up easily, or succumbs easily to distraction or timidity, is at a disadvantage in the tests or in any situation calling for intelligent behavior.

But . . . excessive stubbornness is a handicap in meeting a novel situation, which often cannot be mastered by the first mode of response that one makes to it. Some giving up, some *submissiveness* in detail along with persistence in the main effort, is needed. . . .

Finally, the instinct of *curiosity* or exploration is evidently a factor in intelligence. The individual who is stimulated by novel things to explore and manipulate them will amass knowledge and skill that can later be utilized in the tests, or in intelligent behavior generally.

*The distribution of intelligence.* Table 16 shows a theoret-

<sup>7</sup> Woodworth, R. S. *Psychology: A Study of Mental Life* (1921), pp. 286-88. Reprinted by permission of Henry Holt & Co., publishers.



ical distribution of intelligence, with the terminology commonly used in designating the various classes:

TABLE 16. THEORETICAL DISTRIBUTION OF INTELLIGENCE <sup>8</sup>

CLASS	I.Q.	PERCENTAGE OF ALL CHILDREN INCLUDED
"Near" genius or genius.....	Above 140	0.25
Very superior.....	120-140	6.75
Superior.....	110-120	13.00
Normal.....	90-110	60.00
Dull, rarely feeble-minded.....	80- 90	13.00
Borderline, sometimes dull, often feeble-minded.....	70- 80	6.00
Feeble-minded.....	Below 70	1.00
Moron.....	50- 70	.75
Imbecile.....	20 or 25-50	.19
Idiot.....	Below 20 or 25	.06

**Factors conditioning general intelligence.** *Sex.* A large amount of literature has been accumulated through efforts to determine the comparative intelligence of the sexes. Women and girls excel somewhat in certain special tests, particularly those dealing with ability to distinguish sensory stimuli, memory, most forms of perception, and linguistic ability; men and boys, on the other hand, show similar superiority in mechanical and motor capacities, quickness in reaction, arithmetical reasoning, and ingenuity. The sexes are about equal in tests involving associative processes, and in most school subjects.<sup>9</sup> It is difficult rightly to distinguish what is due to sex from what is caused by interest and training. It seems, however, that the abilities function in the school studies. For example, girls earned better grades on the examinations set by the College Entrance Examination Board in English and the foreign languages, while boys were superior in history, mathematics, and the sciences.<sup>10</sup>

<sup>8</sup> From Woodrow, Herbert. *Brightness and Dullness in Children* (1919), p. 54. Quoted with permission of J. B. Lippincott Company.

<sup>9</sup> See Starch, Daniel. *Educational Psychology* (1919), chap. 5.

<sup>10</sup> *Twenty-Third Annual Report of the Secretary of the College Entrance Examination Board* (1923), p. 36.

Whether the male sex is superior to the female in general intellectual ability is a question still before us. The evidence at our disposal for judgment is contradictory; even though it were not, it is more than likely that only a tentative conclusion would be ventured. Terman found, by the use of individual tests, a small but fairly constant superiority in general intelligence for girls up to and including the age of thirteen years. At fourteen the intelligence for girls was lower than for boys, but this was accounted for by the more rapid elimination of fourteen-year-old girls through promotion to the high school. On the other hand, numerous investigators who have administered group tests to boys and girls, twelve to thirteen years of age and upwards, have often found the average scores for girls to be lower. Girls reach the adolescent acceleration in mental and physical growth a year or two earlier than boys, so that there is a period when they probably are in advance. If the two sexes are of equal mental ability, however, measurements should so indicate, probably before the end of the high-school period. Many investigators are inclined to attribute a part of these differences to the tests, for in all probability they favor boys.

Another persistent theory has it that the male sex is more variable than the female. This means that a larger percentage of men is found in the upper reaches of intelligence, and this fact has been used to explain why it is that more men than women have achieved eminence in letters, art, etc. However, there is the compensating factor, namely, that more men than women are found among the feeble-minded. As is the case with the alleged male superiority in general intelligence, the evidence on this question is contradictory.<sup>11</sup>

<sup>11</sup> For an account of this question, see Thorndike, E. L. *Educational Psychology* (1914), vol. 3, pp. 186 ff. For negative evidence, see Hollingworth and Poffenberger, *Applied Psychology* (1921), pp. 78-91. Also Terman, L. M., *loc. cit.*, p. 70.

For school purposes either side of these questions may be conceded with little effect upon administration. The differences between the sexes brought out by special tests, or by general tests of intelligence, are so small as to be of little significance. There are, moreover, much greater differences between the intelligence levels of the best and the poorest boys than between boys and girls. Girls have abundantly demonstrated their ability to carry the work either in college or in secondary school. They are, indeed, quite likely to lead boys in scholarship. This can in part be accounted for in the colleges by the fact that higher educational institutions enroll a more select group of girls than boys, but this factor certainly cannot be used to explain the general superiority of girls in high-school scholarship. There is, therefore, no reason for assigning boys and girls different class work on account of differences in ability to do such work. The real reason for differentiated work is that boys and girls have different interests, which are for the most part due to the type of training to which each has been subjected, to emotional and other characteristics associated with the sex instinct, and to vocational interests.

*Social-economic status.* Whether high native endowment insures high social status and success in economic advancement, as the hereditarian would contend; or whether an environment containing good schools, good homes, and leisure and opportunity for study is the great factor in unfolding intelligence, as the sociologist might assert, cannot now be answered to the satisfaction of both. On the basis of data supplied by the Army Alpha test, it seems that people living in the larger centers of population are more intelligent than those living in rural areas, that higher intelligence is found along with better educational facilities, and that a similar higher intelligence exists in those States which rank higher in economic conditions.<sup>12</sup>

<sup>12</sup> Alexander, H. B. *Sch. and Soc.* (1922), 16:388-92.

Many will be disinclined to accept these results at face value. On succeeding pages it will be pointed out that, to be valid, an intelligence test must utilize experiences that are common to all persons examined by the test, and that a similar degree of interest toward the various items must be present. It may be argued with considerable force that both of these principles of testing are violated in this comparison of intelligence and social-economic status.

A considerable body of evidence is available to show that children of the so-called "higher" social classes are superior in intelligence to those of the "lower" classes. Two types of investigations may be distinguished. First, tests of intelligence have been made of children from the "better" neighborhoods of an area served by the school, and the results compared with those of children from the "poorer" neighborhoods. Almost invariably it has been found that children from the "better" neighborhoods stand higher in the tests. Sometimes an economic criterion has been taken, with the same results. Table 17 shows the results of an important investigation bearing on this problem.

Second, children have been classified in accordance with the occupations or professions followed by their parents. Speaking in general terms, the results have shown that children of professional men rank much higher in intelligence than those of skilled or unskilled laborers, and noticeably higher than the sons and daughters of clerical workers, contractors, or small merchants.

*Race.* Interest has always been manifest when one race has been compared with another with respect to intellectual ability. Formerly, such comparisons were almost invariably to the disadvantage of the alien race. Of late, however, ethnologists have explained away many of the supposed differences, and have been inclined to place the various races upon a more equal footing with respect to inborn capacity.

TABLE 17. INTELLIGENCE QUOTIENT AND OCCUPATIONAL GROUP OF ELEMENTARY AND HIGH-SCHOOL PUPILS <sup>13</sup>

GROUP	ELEMENTARY PUPILS				HIGH-SCHOOL PUPILS			
	Cases	Per cent of whole group	Median	Middle 50 per cent	Cases	Per cent of whole group	Median	Middle 50 per cent
Professional. . . . .	349	5.07	116	105-130	201	14.02	121	110-129
Business and clerical. . . . .	944	14.11	107	94-121	374	26.10	112	102-126
Skilled. . . . .	1028	15.38	98	87-111	54	3.77	111	101-120
Semi-skilled. . . . .	524	7.84	95	84-107	267	18.63	108	97-125
Farmer. . . . .	3098	46.33	91	82-103	48	3.50	108	101-120
Unskilled. . . . .	745	11.14	89	77-102	489	34.12	106	97-119

Table read as follows: Children of the professional classes numbered 349, and composed 5.07 per cent of the entire group of elementary school children. The median (or average) intelligence quotient was 116; 25 per cent scored lower than 105 I.Q., 25 per cent higher than 130 I.Q., and 50 per cent from 105 to 130 I.Q.

Scientific comparisons have not always been possible, because instruments for measuring inborn capacities are of recent origin and need more refinement and development, and tests originated for the measurement of the abilities of one ethnic group are not suitable for application to another.

Recently, however, studies have been made which throw light upon the problem of those school administrators who have to consider the type of education suitable to the boys and girls of parentage other than the native white. Closer comparisons are possible through the application of scales to the various racial groups who have been born and reared under similar environments, for example, the various sections or areas of the United States. Such investigations indicate that negro children possess somewhat less ability than white children, as shown both by performance upon tests and by ability to do school work. They show a high percentage of retardation, and increased education seems to

<sup>13</sup> Table arranged from data given by Haggerty, M. E., and Nash, H. B. *Jour. Educ. Psych.* (1924), 15: 559-72. See also Madsen, I. N. *Sch. Rev.* (1922), 30: 692-701.

exercise no constant influence upon intelligence quotient.<sup>14</sup> Comparable results were found in investigations of the abilities of Indian children.

In a book which has aroused considerable comment, some of it adverse, Brigham shows that the native intelligence of immigrants to this country has decreased within the last twenty-five or thirty years. People of Nordic stock, who in general are from Northern and Western Europe (the "old" immigration) and their descendants rated higher on the army tests than did the immigrants of Alpine and Mediterranean stock, who come from Southern Europe (the "new" immigration). The American negro rated lowest of all. Lack of space prohibits citing more than one of Brigham's numerous comparisons: the English-speaking Nordic group furnished about 40 men in 1000 who were above the average white officer, and about 8 in 1000 who were below an estimated mental age of eight. For the negro draft these figures are 4 and 100; for the Alpine and Mediterranean races 5 or 10 and 40. About 350 in 1000 of the Alpine and Mediterranean types were below the average negro. Since 1901 there have been some 2,000,000 immigrants below the average negro.<sup>15</sup>

All this has an important bearing upon the administration of secondary education. It means that we can expect a heavier elimination among negro children and among children of Southern European extraction. Junior high schools located in areas inhabited by negroes or by immigrants from Southern Europe will be called upon to provide curricula adapted to their communities. As the situation stands at

<sup>14</sup> Jordan, A. M. *Sch. and Soc.* (1922), 16:503-04; Garth, T. R., and Whatley, C. A. *Sch. and Soc.* (1925), 22:501-04. For a summary of older studies, see Norsworthy and Whitley, *The Psychology of Childhood* (1918), pp. 13 ff.

<sup>15</sup> Brigham, C. C. *A Study of American Intelligence* (1923). For a reply see Bagley, W. C., *Educ. Rev.* (1924), 67:179-87.



present, it is likely that the race factor will not enter seriously into the administration of the senior high school, for, owing to the factor of selection, the difference between the average intelligence of the various groups will be small. It will be outweighed by other considerations.

**Physical traits.** If general intelligence is composed of physical or mechanical ability, as disclosed in learning physical coördinations or in using tools and machines; social ability, as shown by skill in regulating human relationships in the school, and in political or in business life; and abstract ability, as shown in learning books, it is evident that none of these factors can be omitted if a just appraisal of native capacity is made. It seems evident, however, that tests now used in measuring general intelligence are deficient both in measuring ability to manage concrete things and in ability to manage people. As Woodworth<sup>16</sup> points out, there are some men whose intelligence quotient, according to such scales, is low, and who nevertheless have steady jobs, earn good wages, and get on well in a simple environment. There are many others who would not be classed normal on the Binet tests, and who cannot master the work of the upper grades, who become skilled workmen or even artists. It takes mentality to perform skilled work, but a different kind from that demanded by what is called intellectual work.

Differences in mechanical ability and in the power to form motor coördinations undoubtedly occur. On the basis of the theory which conceives intelligence to be a group of related capacities, we should expect to find ability to manage concrete things on the part of some who do not possess as high a degree of abstract intelligence. Tests especially designed to measure motor intelligence have to some extent borne out this expectation. Of several hundred boys attending the seventh and eighth grades in a New York City public

<sup>16</sup> Woodworth, R. S., *loc. cit.*, p. 282.

school, roughly a fourth were found to be above the average both in general intelligence and in mechanical ability; a fourth were above the average in general intelligence and below in mechanical ability; a fifth below average both in general intelligence and in mechanical ability; and slightly more than a fourth were below the average in general intelligence and above in mechanical ability.<sup>17</sup> A few studies have been made showing comparisons between success in the regular academic studies and industrial work. Sometimes but little correspondence in ability is found, leading to the conclusion that boys with relatively low intelligence quotients are able to compete with the usual boy far more satisfactorily in industrial work than in the pursuit of academic knowledge.<sup>18</sup>

Children of a given age differ widely in height, weight, strength, lung capacity — in all physical measurements. They differ also with respect to physical defects. These differences condition to some extent the type of school work they best can do, but they affect more the amount of work that should be undertaken. Together with the stage of physical development reached, they condition vitally the program of health education, including physical exercise and corrective work.

**Social intelligence.** Our present tests are deficient when it comes to measuring social intelligence or ability to manage people, just as they are inadequate for classifying individuals into groups in accordance with ability to form physical coordinations or to do work with the hands. While the real leader is more than likely to score high in the intelligence tests, it very often turns out that the person who scores high in the tests does not possess the qualities of leadership.

<sup>17</sup> Stenquist, J. L. *Measurements of Mechanical Ability* (1923).

<sup>18</sup> Voorhees, J. H. *Jour. Educ. Res.* (1921), 4:378-89; Bird, V. A., and Pechstein, L. A. *Sch. Rev.* (1921), 29:782-86.

A leader takes precedence by virtue of superior qualifications or influence. More specifically, these qualifications usually include a good appearance, a good voice, ease in diction, self-confidence, ability in handling others, and facility for getting them to coöperate and coördinate their activities. To remain with some permanence in control of the movements or actions of a group, or to guide a mode of thinking, the leader must in addition be well informed upon questions of group interest.

Boys and girls of high-school age unconsciously recognize many of these factors in selecting their leaders. It may be that they give less attention to the knowledge element of leadership than their elders would approve, probably because their leaders are chosen first of all for efficiency in those activities in which high-school students are interested. These interests are not so much intellectual as they are instinctive. Instead of springing from history, literature, foreign languages, or mathematics, they are more likely to arise from athletics, social activities, or leisure-time pursuits. Once a boy has demonstrated his leadership in one line of activity, he is likely to be honored by leadership in another.

Little exposition is needed to convince one that individuals differ greatly in leadership ability. Granting that this ability is inborn to a greater or less degree, it does not follow that it cannot be cultivated. On the contrary, cultivation in the sense of realizing to the fullest extent the possibilities of which an individual is capable may occur in the same way that the capacities for more abstract learning may be realized. Appropriate training should therefore be given — a fact long recognized. Similarly, pupils should be trained intelligently to evaluate the qualities of leadership in others, as well as to coöperate under leadership.

**Differences in vocational interests.** It is quite obvious that the only way we can determine the vocation a pupil ex-

pects to follow is by asking him. But his decision is often given little weight, because every one knows that an individual pupil is quite likely to be wrong. He may, indeed, change his mind several times before he ultimately settles upon his life's work. It is not altogether surprising that this should be so, because if any matter of importance has been neglected by the school it is that of furnishing to its pupils a basis for intelligent choice of vocation. Instead of patronizing pupils when they name the profession, trade, or calling they expect to enter, we should set ourselves to the task of helping them in this important matter. In so doing, we should look one of our greatest inconsistencies squarely in the face. We know that the unguided fourteen-year-old cannot intelligently choose his vocation, yet for years we have enrolled pupils upon their own choice in commercial, agricultural, or industrial curricula designed to provide training for a specific vocational field.

Many lists are available showing vocational choices of boys and girls. Table 18 has been included because it gives a complete list of choices of approximately half the seniors

TABLE 18. VOCATIONAL CHOICES OF 2844 HIGH-SCHOOL SENIORS, BY PER CENTS<sup>19</sup>

	BOYS			GIRLS			TOTAL	
	401* up	101- 400	25- 100	401 up	101- 400	25- 100	Boys	Girls
Agriculture.....	8.2	14.0	21.3	00.1	0.4	0.6	13.3	0.3
Business.....	26.2	16.3	11.3	11.7	10.4	6.9	19.6	10.0
Engineering.....	30.2	32.1	28.1	0.0	0.0	0.0	30.2	00.0
Journalism.....	4.0	1.8	2.0	4.0	2.6	1.8	2.8	3.1
Mechanical trades.....	1.1	2.1	7.1	0.0	0.0	0.0	3.0	0.0
Music.....	1.3	0.3	0.3	5.1	5.4	3.5	0.7	4.8
Nursing.....	0.0	0.0	0.0	5.1	3.6	5.3	0.0	4.8
Pharmacy.....	0.5	3.3	2.3	1.1	0.8	0.4	1.7	0.8
Professions.....	10.7	11.8	10.0	2.2	2.1	0.2	10.8	1.7
Stenography.....	0.5	0.0	0.0	15.4	20.4	14.7	0.3	16.6
Teaching.....	1.1	2.7	1.0	24.7	41.8	51.2	1.5	36.7
Miscellaneous.....	5.8	7.0	7.4	16.7	8.5	7.2	6.6	11.7
Undecided.....	10.0	8.2	9.4	14.0	4.4	7.4	9.3	9.4

\* Enrollment of high schools.

<sup>19</sup> Data collected by the writer.

in a single State. These young people were only a month from graduation — a time when they were doing considerable thinking upon the question. The table also brings out sex differences and differences manifested by boys and girls who attended high schools of various enrollments. Table 19 shows the vocational choices for seventh-grade pupils in the city of Baltimore.\* The data for these tables were collected at about the same time. Tables showing how vocational decisions change with length of stay in school are presented in Chapter X.

TABLE 19. VOCATIONAL CHOICES OF 1644 SEVENTH-GRADE PUPILS, BY PER CENTS<sup>20</sup>

OCCUPATIONAL GROUP	BOYS	GIRLS
Agriculture.....	0.6	0.1
Manufacturing.....	1.8	2.6
Mechanical industries.....	20.5	1.1
Transportation.....	1.6	1.0
Trade.....	11.1	2.3
Public service.....	1.1	0.0
Engineers.....	21.5	0.0
Physicians.....	8.1	0.7
Lawyers and judges.....	6.5	1.5
Teachers.....	1.3	27.6
Entertainers and artists.....	3.2	4.3
Other professions.....	12.6	6.7
Domestic and personal.....	0.0	0.3
Clerical.....	8.4	49.9
No choice.....	1.7	1.9

*Sex differences.* Agriculture, engineering, the mechanical pursuits, mining, and transportation are the broad vocational fields of interest only to boys. There are, of course, many specific callings which girls do not choose, although the number grows less year by year. Nursing, stenography, and teaching are occupations which boys evidently regard as feminine. Home-making, which is the ultimate calling of the vast majority of girls, is conspicuous because of its ab-

<sup>20</sup> Table arranged from data given by Franklin, E. E. *The Permanence of Vocational Interests of Junior High School Pupils* (1924), pp. 21, 38-39.

sence in tables showing vocational choices of girls. Naturally hesitant in expressing their views here, girls are further influenced by the span of years which will elapse between the time they leave school and enter their own homes. This interval will, of course, be devoted to wage earning, and their decisions show what they expect to do during this period.

*Differences due to environment.* When the choices of high-school students from one locality are compared with those of students in another locality, more similarity prevails than one would expect to find. Business, the professions, and especially engineering seem to make a universal appeal to boys. A similar situation exists among girls as regards teaching, clerical work, and nursing. More boys from the rural high schools than from cities name agriculture as the work which later will engage their attention, as would be expected, but it is certainly true that we cannot assume an interest in agriculture as a possible vocation for every boy living on the farm, nor can we assume a lack of interest in that calling on the part of city boys. It is probable that girls from small high schools expect to enter normal schools and to engage in elementary-school teaching in large numbers, while girls from the cities enter upon high-school teaching after the completion of a college course.

On the basis of pupil interests, the guidance program in any high school will have to consider all of the major vocational fields. If this were not the case, however, such consideration would probably be desirable. Pupil interests also establish a basis for differentiated curricula. A difficult problem often arises in adapting the school to the local community and to the vocational interests of pupils, for the two are not always in harmony.

**Differences due to racial and family social inheritance.** Boys and girls from homes where the parents are foreign-



born or have had poor educational advantages are quite likely to be handicapped in their use of English. The problem is of lesser dimensions than in the elementary school, where it may be necessary to teach children to speak English, but in the secondary school these pupils have to struggle against the handicaps of poor pronunciation, incorrect grammatical construction, and poor vocabulary. As a class it is doubtful if they ever attain the mastery in expression of pupils who all their lives have heard words used with correctness.

These more fortunate boys and girls have other advantages. They are surrounded by good magazines and books, they hear good music, and they are in an environment where interest is shown in current civic and political questions. It is never assumed that they will do otherwise than finish high school and enter college.

The high-school generation which is foreign-born, or which has foreign-born parents, often is the source of disciplinary problems both in the school and out. Its members are inclined to cast aside the customs and beliefs of their parents and nationality, and to substitute for them American traditions and practices, but the period of transition is often one where the youth is governed by neither. He is unstable, for his ideals and habits are not yet formed. More or less frequent infractions of rules of conduct occur.

These considerations certainly make methods of treatment advisable which the ordinary school routine does not supply. The foregoing statements probably describe both extremes, rather than the whole question, and it is entirely probable that the majority of pupils are somewhere between the descriptions given. How much they should affect the organization of classes and other administrative features of the school cannot be stated unequivocally. These depend too much upon the location and the student population of

the school. In any case they call for a sympathetic understanding of individual pupils.

**Differences in moral qualities.** There can be little doubt that individuals differ with respect to moral attributes or traits, although the nature and the amount of the variation are hard to determine. No one has succeeded in classifying in anything like final form the attributes or traits in question, and only the merest beginnings in measurement have been made. On this point Dresser well says:<sup>21</sup>

While mental and physical tests may be said to disclose qualities essential to certain kinds of work, and observation and questions help to determine the possession or lack of certain other important traits, what is to be said about other characteristics which go to make up an individual, and the means of detecting these? For instance, the examination of an applicant by means of a job analysis may show that a man has the abilities of a first-rate operator, but actual results may show that he is a very poor operator, possibly on account of his dislike for the work, dissatisfaction with the pay, or lack of ambition. In short, there are moral qualities, or qualities of character, which must be distinguished from qualities of technique, or ability as disclosed by the tests.

In contrast with specialists who put the whole emphasis on intelligence tests, Link calls attention to the importance of considering these qualities, although little is known about the origin and operation of such qualities as he specifies, namely, enthusiasm, determination, cheerfulness, reliability, and their opposites; qualities which are obviously best noted when an individual is at work. Laziness and discontent are not necessarily inherent qualities, but may appear when a worker is ill suited to his job. A worker who, as the tests show, is well suited to his particular task may still prove disgruntled and lazy, possibly because of ambition to do something else, as may be proved by giving him opportunity to work at the job which he prefers, a job which enlists other moral qualities. Again, laziness, unsteadiness, dishonesty, and the like, may indeed be inherent, whatever the work. It is not safe to judge

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<sup>21</sup> Dresser, H. W. *Psychology in Theory and Application* (1924), pp. 327-28. Reprinted by permission of the publishers, Thomas Y. Crowell Co.

that a person either has or has not the moral qualities, variable as these are.

Link proposes a division into skilled and unskilled workers, the former having attained their skill through a process of education and experience which leads to the conclusion that the workers actually possess determination, ambition, and other desirable moral traits. Again, the expert workman is likely to be interested in his work for its own sake, while the unskilled worker probably has little love of work. There is need of testing applicants with great care, so as to place them where their natural abilities may be immediately applied.

*Sex differences.* Thorndike points out that men are endowed with a greater amount of the fighting instinct, while women are correspondingly favored when it comes to the nursing instinct. Men are possessed with a stronger desire to be the winner of games and serious contests; women have a stronger desire to nurse, to care for, to relieve, comfort or console others. Thorndike takes the fighting instinct to be the root of a man's intellectual efforts, which are in great measure aimed to out-do another man, to subdue nature, and to conquer assent; the maternal instinct in its turn is the "chief source of woman's superiorities in the moral life."<sup>22</sup>

*Relation between character and intelligence.* There is evidence to show that character is closely correlated with intelligence. Thus Webb<sup>23</sup>

asked several instructors to grade a large number of boys with reference to the more characteristic intellectual traits, and also on a series of more general traits, "tendency not to abandon tasks in the face of obstacles," "tendency not to abandon tasks from mere changeability," "kindness on principle," "trustworthiness," "conscientiousness," "readiness to become angry," "eagerness for admiration," and "bodily activity in the pursuit of pleasure."

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<sup>22</sup> Thorndike, E. L. *Educational Psychology* (1914), vol. 3, p. 203.

<sup>23</sup> From Pillsbury, W. B. *The Essentials of Psychology* (1919), p. 392. Reprinted by permission of The Macmillan Company, publishers.

When these were correlated with each other it was found that the first five showed high correlation, — an individual who was pre-eminent in one would be likely to be well favoured in the others also, while they showed a negative correlation with the last three. The last three also correlated closely with each other. Webb argued from these results that we must recognize two groups of traits, an intellectual and what he calls the character group, which depends upon what are popularly known as the volitional and emotional characteristics. The desirable traits in each are likely to be found together. Between the two groups the correlations are not so close as they are between traits within each group, but even here the most desirable characteristics show some correlation. On the whole the man with the better intelligence is also the better tempered and has the better qualities of leadership and persistence.

Using rankings given by parents and teachers, Terman found that fifty children of superior general intelligence ranked high in the estimate of both parents and teachers in such traits as sustained attention, will power, persistence, dependability, and studiousness, and that they ranked lowest in social adaptability and leadership. He is of the opinion that the low ranking in the last two traits may be due to preference for reading and to private lessons, and to the fact that these children are associated with those who are older and whose greater physical maturity gives them an advantage over younger and more inexperienced pupils in play activities. Superior children ranked high in such moral traits as obedience, conscientiousness, dependability, unselfishness, evenness of temper, and will power. They were, according to the opinions of the teachers, exceptionally free from such moral faults as disobedience, selfishness, obstinacy, and dishonesty. "These ratings," concluded Terman, "would indicate that our subjects are about as superior morally as they are intellectually."<sup>24</sup> Other investigators have found similar results.

<sup>24</sup> *Loc. cit.*, p. 37. See also Yates, D. H. *Jour. Educ. Psych.* (1920), 11:264.

## TOPICS FOR DISCUSSION AND INVESTIGATION

1. Examine a curve of distribution which shows irregularities. Explain the reasons for the irregularities.
2. How much, in your judgment, do the abilities of eleventh- and twelfth-grade pupils overlap? High-school seniors and college freshmen? Of what significance is the overlapping?
3. Contrast the theories of general intelligence outlined in this chapter with other theories of general intelligence.
4. Would the laws of biological inheritance support the theory of general intelligence as a group of related factors, as a single capacity, or neither?
5. What arguments can you marshal to support the position that social-economic status is more potent than biological heredity in determining intelligence as measured by present tests?
6. Is it safe to go on the assumption that each individual possesses traits in which he excels?
7. How do you account for the great similarity in vocational decisions found among boys and girls in different sections of the country?
8. Suppose that pupils had adequate guidance in making their vocational selections. How would the results appear in tables showing their final decisions?
9. Should a principal instruct his teachers to follow the curve of distribution in assigning school marks?
10. How would you determine the abilities of individual pupils in one of the subjects of instruction?

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## CHAPTER IX

### ELIMINATION FROM SCHOOL

How long do pupils remain in school? Elimination, or withdrawal from school before completion of the course, is almost negligible up to and including the fourth grade. In the fifth grade it makes a very noticeable beginning, while in the sixth grade different investigators show that from ten to thirty per cent of the pupils are eliminated. The percentages of pupils reaching the higher grades become progressively smaller. Table 20, arranged from the results of the more important investigations, shows the percentages of beginners who reach the various grades.

TABLE 20. PERCENTAGES OF PUPILS WHO REACH EACH GRADE <sup>1</sup>

GRADE	THORNDIKE (1907)	AYRES (1909)	STRAYER (1911)	BONNER (1920)	PHILLIPS (1924)
1	100	100	100	100	—
2	100	100	100	no data	—
3	100	100	100	no data	—
4	90	100	100	no data	—
5	81	100	95	86	100
6	68	90	74	73	83
7	54	70	63	64	71
8	40	50	51	58	63
9	27	40	39	32	34
10	17	20	22	23	26
11	12	12	18	17	18
12	8	10	14	14	15

<sup>1</sup> Thorndike, E. L. *Bur. of Educ. Bull.* (1907), no. 4, pp. 11, 47. Data from 23 cities of 25,000 population or over.

Ayres, L. P. *Laggards in Our Schools* (1909), p. 71. Data from 58 cities.

Strayer, G. D. *Bur. of Educ. Bull.* (1911), no. 5, pp. 6, 135-36. Data from 133 cities of 25,000 population or over.

Bonner, H. R. *Bur. of Educ. Bull.* (1920), no. 11, p. 31. Data from 23 States. Bonner finds that 13.1 per cent graduate from high school.

Phillips, F. M. *Bur. of Educ. Bull.* (1924), no. 38. Based upon 3,889,542 children entering the first grade in 1911.

The greatest proportionate loss occurs between grades eight and nine. Older investigations showed that the greatest proportionate loss of pupils occurred between the ninth and tenth grades. Bonner's figures (substantiated by the later investigation of Phillips) show that elimination is most rapid between the eighth and ninth grades. He remarks that the percentage of children in the first year of the high school has diminished, and that the percentages in the eighth grade and in the fourth year of the high school have increased since 1911. These changes have been taking place gradually.

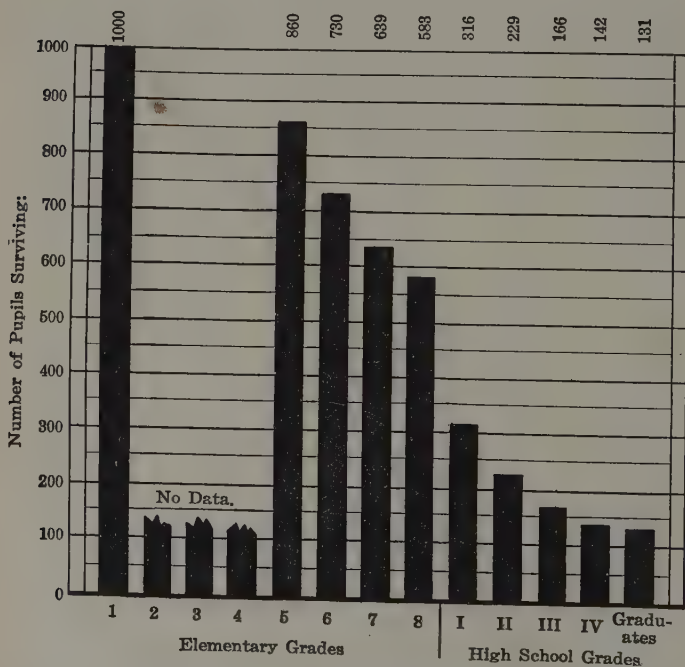


FIGURE 9. NUMBER OF PUPILS OUT OF EACH 1000 BEGINNERS IN 1907 WHO REACHED THE VARIOUS GRADES

(Bonner, H. R. *Bur. of Educ. Bull.*, 1920, no. 11, p. 21.)

The percentages are significant, as Bonner points out, since they show the holding power of the schools and indicate just what percentages of children reach the different educational levels. A graphic representation of his results is given in Figure 9.

*Rate of elimination in secondary schools.* In order to bring out more clearly the problem of elimination as it exists in junior and senior high schools, Tables 21 and 22 have been arranged. These tables clearly show a growing tendency for greater percentages of pupils to remain longer in school.

*Elimination dependent upon local conditions.* Variations in the figures shown in the tables are due to the time at which compilation was made, to different methods of com-

TABLE 21. PERCENTAGES OF SEVENTH-GRADE PUPILS  
RETAINED IN REMAINING GRADES

GRADE	THORNDIKE (1907)	AYRES (1909)	STRAYER (1911)	BONNER (1920)	PHILLIPS (1924)
7	100	100	100	100	100
8	78	71	81	91	89
9	50	57	62	49	48
10	31	29	35	36	37
11	22	17	29	26	25
12	15	14	22	22	21

TABLE 22. SURVIVAL PERCENTAGES, GRADES NINE TO TWELVE <sup>2</sup>

GRADE	1910	1912	1914	1916	1918	1920	1922	1924
9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
10	68.1	71.0	70.1	72.1	71.0	71.4	75.4	..
11	49.0	51.3	49.2	54.1	52.4	52.9	57.5	58.3
12	..	39.4	40.1	44.3	44.0	42.0	45.3	49.3

<sup>2</sup> *Bur. of Educ. Bull.* (1925), no. 40, p. 5. In computing these figures the first year enrollments are taken as bases, and divided into the enrollments of the second, third, and fourth year of the high school for the first, second, and third year following the basic year.

Increased No. retained 17th Sept

putation, and to the areas included. They all show a tremendous pupil mortality — a condition which has been the source of serious concern for some time. Mass figures give only a general view, and for the most part they represent selected areas. In interpreting them, these facts must be borne in mind. To understand his own problem of elimination and to meet conditions growing out of it, the school administrator will probably find it advisable to make an investigation of his own school system.

The problem of elimination is very complicated. Great difficulty is encountered when one undertakes to isolate the various causes and to assign to each its relative importance. When the causes are definitely known, investigations of individual pupils will assist in assigning them to groups in accordance with probable length of stay. Considerable progress has been made in this direction, and in the succeeding paragraphs factors affecting the length of stay in school will be considered.

**Retardation, normal progress, and acceleration.** If a boy or girl enters school at the age of six and advances a grade a year, he will enter the seventh grade at the age of twelve, the eighth grade at the age of thirteen, and the ninth grade at the age of fourteen. However, many do not enter school until the age of seven or nearly seven, and for this and other reasons a child is usually regarded as making normal progress if he is twelve or thirteen at the beginning of the seventh grade, and so on. As the terms are generally used, a child is said to be retarded if he is behind the grade where he belongs according to his chronological age; he is making normal progress if he is in the grade where he should be; and he is accelerated if he is in advance of the grade where his age would locate him.

The amount of retardation, normal progress, and acceleration varies greatly with the school system, so that, as in

elimination, the administrator to understand his problems must make a special study of his own school system. Table 23 shows in general the percentage of children under age, of normal age, or over age for their grades. Comparisons are made with conditions existing in 1908 and a dozen years later.

TABLE 23. PERCENTAGES OF PUPILS UNDER AGE, OF NORMAL AGE, OR OVER AGE FOR THEIR GRADE <sup>3</sup>

	UNDER AGE			NORMAL AGE			OVER AGE		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
1908.....	4	5	4	56	60	58	40	35	36
1918.....	11	13	13	66	68	67	23	19	21
1922.....	..	..	12	..	..	66	..	..	22

From the table it will be seen that, roughly, a fifth of all school children are one or more years retarded, and an eighth accelerated. When the earlier studies of retardation called attention to the problem, it was pointed out that, theoretically, about as many students should be accelerated as retarded. This view was held because theoretically there should be as many bright students as dull students, and the work of a grade should be adjusted according to the ability of the average pupil. This condition was not actually found, largely because of the rigid organization of the grades. It has always been easier for a pupil to fall behind than to forge ahead. Criticism of the non-flexible character of the school and a realization of the problem involved have led superintendents to make adjustments, so that pupils may progress at a rate commensurate with their abilities. Less stress has

<sup>3</sup> From data given in *Bur. of Educ. Bull.* (1920), no. 24, pp. 32-33; (1924), no. 38, p. 18.

been placed upon covering ground as a preparation for work of a later grade, pupils have been allowed to make up work in summer schools or through other means, and bright pupils have been permitted to skip grades. As a result, a much different condition existed in 1918 than in 1908.

It has been shown again and again that the retarded boy or girl tends to be eliminated. For example, in a study of the persistence of attendance in eighty school systems, Bonner shows that the proportion of over-age pupils to the total number in the grade gradually becomes less from the fifth grade on through the high school. On the other hand, pupils of normal age or below for their grade move steadily through the grades. Twelve under-age pupils were found for every 100 enrolled, from the second grade up to and including the ninth grade. In other words, no elimination of under-age pupils occurred before the tenth grade.<sup>4</sup>

The same situation is found in high school and in college. The older the pupil, the more likely he is to drop out. On the other hand, a boy or girl who enters high school at the age of twelve is from two to four times as likely to finish the course as one who enters at the age of sixteen. Thirteen is about four times as fruitful of graduation as seventeen, and fourteen bears a similar relation to eighteen.<sup>5</sup> High-school students who enter college before eighteen years of age remain longer than those who enter at eighteen or later, and, in general, the college may expect its younger entrants to stay longer than its older entrants.<sup>6</sup>

**Ill health as a cause of elimination.** Retardation is one of the most productive causes of elimination, and absence from school is one of the chief causes for retardation. Physical

<sup>4</sup> Bonner, H. R. *School Life* (1920), 5: 10-11.

<sup>5</sup> See Van Denburg, J. K. *Causes of the Elimination of Students in Public Secondary Schools of New York City* (1911), p. 91; O'Brien, F. P. *The High-School Failures* (1919), p. 33.

<sup>6</sup> Pittenger, B. F. *Sixteenth Yearbook* (1917), part 2.



~~defects and malnutrition~~, so prevalent among school children, cause retardation by rendering the pupil unfit to gain the maximum profit from his school work, and illness causes retardation for the same reason and from resulting absence. It is impossible to say what proportion of retardation and elimination results from physical defects and ill health for the nation as a whole, but Rapeer estimates, from a survey of a number of cities, that nearly a fifth of non-promotion and of retardation in the area investigated was caused by illnesses and physical defects of school children. Illness of the child was shown to be the cause, in nearly half of the cases, of absence from school in Chicago. Nearly a third of rural children absent from school in Alabama, the year following the enactment of the compulsory school law, were unable to attend for the same reason.<sup>7</sup>

A recent Detroit investigation,<sup>8</sup> covering more than 80,000 children, showed a clear tendency toward an increase in percentage of underweight in proportion to the years of retardation in school work. On the other hand, an equally consistent trend in the opposite direction accompanied each step of acceleration.

It would lead us too far afield to enter upon a discussion of the prevalence of physical defects and illness among school children, or to speak of the ways and means of preventing such ailments and curing and correcting those found to exist. There is little doubt that an adequate program of health education, which would include medical and physical examinations, would do its share in reducing retardation and elimination. Relatively few places have such programs, and progress toward this goal is exceedingly slow. In the meantime physical defects and illness, even though preventable in seventy per cent of the cases, as it has been

<sup>7</sup> Sechrist, F. K. *Education and the General Welfare* (1920), pp. 74-76.

<sup>8</sup> *Detroit Educ. Bull.* (June, 1921), pp. 24-25.

estimated, must be included in the causes for retardation and elimination.

**Sex as a determiner of length of stay in high school.** Over one half of the total high school enrollment, or 57.2 per cent, consists of girls. Not only does the high school enroll a larger percentage of girls than of boys, but it exerts a greater influence in keeping girls in school. For example, 54.7 per cent of the students enrolled in the freshman year in 1918 were girls, while 61.2 per cent enrolled in the senior year were girls. While it is probable that war conditions increased the proportion of girls in 1918, particularly in the last years of the high school, the point should be emphasized that the proportion of girls and boys has remained relatively unchanged since 1890. The superior holding power of the school for girls is also in evidence in the upper elementary grades.

TABLE 24. PERCENTAGE DISTRIBUTION BY SEX OF 1,645,171 HIGH-SCHOOL STUDENTS<sup>9</sup>

	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
Boys. . . . .	45.3	42.7	41.0	38.8
Girls. . . . .	54.7	57.3	59.0	61.2

As the work of the high school has been organized in the past, it is probable that many would agree with the assertion that it appeals more to girls than to boys. However this may be, it is likely that restlessness and the desire to earn money are stronger in the boy than in the girl. In the past, more opportunities for employment have been open to boys, and they have otherwise been less hampered by tradition and custom. What change there will be in this condition cannot be foretold. At present it must be remembered that

<sup>9</sup> *Bur. of Educ. Bull.* (1920), no. 19, p. 42.

sex is a factor to be reckoned with in determining length of stay in school.

**Race, nationality, and school attendance.** Investigations of elimination as a rule do not separate pupils according to nativity; however, a general idea of the situation is gained from the figures shown in Table 25, which shows, for the principal population classes, the percentage of each total age-group attending school in 1920. It seems that white

TABLE 25. PER CENT OF TOTAL AT EACH AGE ATTENDING SCHOOL <sup>10</sup>

AGE	ALL CLASSES	NATIVE WHITE (native parentage)	NATIVE WHITE (foreign parentage)	NATIVE WHITE (mixed parentage)	FOREIGN BORN (white)	NEGRO
5	18.8	17.6	24.2	25.8	18.8	11.8
6	63.3	64.5	69.4	72.0	53.1	42.9
7	83.3	84.9	88.3	88.8	72.9	64.9
8	88.5	90.2	92.4	92.4	79.8	72.7
9	90.4	91.8	93.6	93.7	83.1	77.0
10	93.0	94.7	96.2	96.2	86.3	80.0
11	93.9	95.2	96.6	96.6	87.8	82.1
12	93.2	94.9	96.5	96.6	86.6	80.6
13	92.5	94.2	95.6	96.0	85.9	79.3
14	86.3	89.3	85.8	89.5	76.5	73.4
15	72.9	77.8	64.9	74.0	57.3	63.3
16	50.8	56.8	37.5	49.5	30.2	47.1
17	34.6	40.1	23.3	33.3	17.0	30.5
18	21.7	25.6	14.5	21.4	10.1	17.3
19	13.8	16.2	9.7	14.2	7.0	9.9
20	8.3	10.0	6.3	9.3	4.4	4.6

children of mixed foreign parentage attend school between the ages of seven and thirteen better than any other class, even including the children of native white parentage. This is probably because they live in large numbers in the cities of New England, the Middle Atlantic, and the Mississippi Valley States, where the compulsory attendance laws are

<sup>10</sup> *Fourteenth Census* (1920), vol. 2, p. 1070.

well enforced. Children who are fourteen are eliminated very rapidly throughout the secondary-school period. Less than half as many graduate as in the case of native whites of native parentage. Between these two groups come native whites of mixed parentage and native whites of foreign parentage, the former surpassing the latter in persistence.

It will be noticed from the table that colored boys and girls show a heavier elimination than do white boys and girls. Much of the colored school population lives south of the Mason and Dixon line, and schools provided for them in that section are such that it is unfair to make general comparisons between the white and negro enrollments. In those States where the same educational opportunities are presumably open to both white and colored children, superintendents' reports show that negro boys and girls are eliminated more rapidly than white boys and girls. Inroads are made on their numbers at the fourth and fifth grades, and enrollment continues to fall off rapidly during the elementary-school period. A much smaller percentage of those who enter high school complete the four years than is the case with white pupils.<sup>11</sup>

**Social and economic status and elimination.** Attempts have been made from time to time to determine whether or not those boys and girls who leave school as soon as the compulsory attendance law releases them are forced to do so on account of economic necessity. A number of such investigations have been made, and they are, for the most part, in agreement in their conclusion that about two thirds of the children who drop out of school could remain if they so desired. These reports stress the point that whether the child remains in school or not depends more upon the parent's attitude in the matter than upon the size of the family income.

<sup>11</sup> *Bur. of Educ. Bull.* (1920), no. 11, p. 24.

The decision is thus left to the children, and they, not having been intelligently influenced either in school or at home, do not find it worth while to remain in school. They leave because they are tired of school, because of dislike for study or of the teacher, because of poor success in school, and because they prefer to work. Sixty-five per cent of 583 children, according to their own testimony, would not have been desirous of staying even though manual or industrial art had been given in school. Here it may be noted that those in charge of continuation-school work for children fourteen to sixteen years of age find that many of their pupils prefer to work rather than to attend continuation-school classes.<sup>12</sup>

*The high-school situation.* Financial status, as shown by the amount of rent paid per month, was found to be only a slight factor in the determination of length of stay in high school in the case of New York City students,<sup>13</sup> but another investigation made in Urbana, Illinois, showed a fairly high correlation between length of stay in high school and such economic factors as rental value of the home, and the amount of real and personal property possessed by the parents.<sup>14</sup>

The most conclusive study of this problem as it affects high-school students is the recent one by Counts.<sup>15</sup> From data collected from 16,283 high-school students in Bridgeport, Mount Vernon, St. Louis, and Seattle, he shows that the public high school is patronized largely by those who are in comfortable economic circumstances and who, from the standpoint of occupation, are listed among the professions, the proprietors, commercial service, managerial

<sup>12</sup> For a summary of the earlier studies, see *Bur. of Educ. Bull.* (1918), no. 24, pp. 38-59.

<sup>13</sup> Van Denburg, J. K., *loc. cit.*, p. 113.

<sup>14</sup> Holley, C. E. *Fifteenth Yearbook* (1916), part 2, especially pages 55 ff.

<sup>15</sup> Counts, G. S. *The Selective Character of American Secondary Education*. See pp. 33, 38, 46-54, 144.

service, and clerical service. The laboring classes are so poorly represented as to warrant the statement that they have hardly begun to think in terms of secondary education. These facts are set forth in Figure 10.

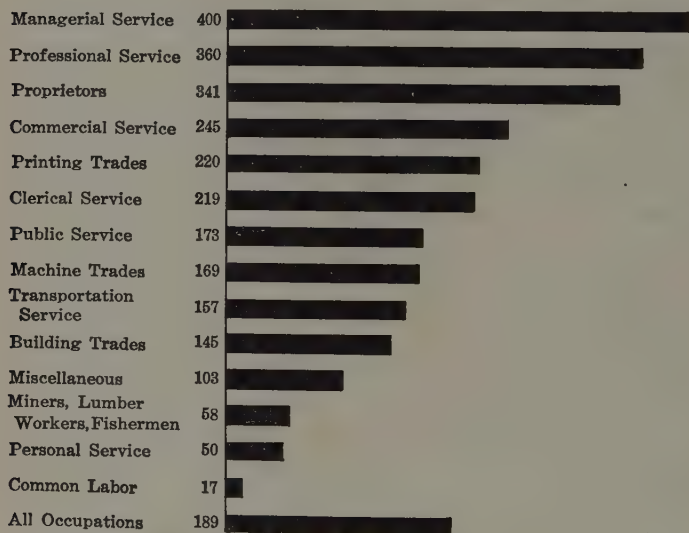


FIGURE 10. CHILDREN IN THE HIGH SCHOOLS OF FOUR CITIES FROM EACH OCCUPATIONAL GROUP FOR EVERY 1000 MALES OVER FORTY-FIVE YEARS OF AGE ENGAGED IN THAT OCCUPATION IN THE FOUR CITIES, ACCORDING TO THE FEDERAL CENSUS FOR 1910

Counts's investigation shows, second, that not only do the children of the more favored social and economic classes attend the high school in largest numbers, but also that they are much more likely to remain in high school until graduation. The son or daughter of a professional man is, approximately, five times as likely to remain four years in high school as the son or daughter of a laborer (Figure 11).

To corroborate the validity of these findings, Counts



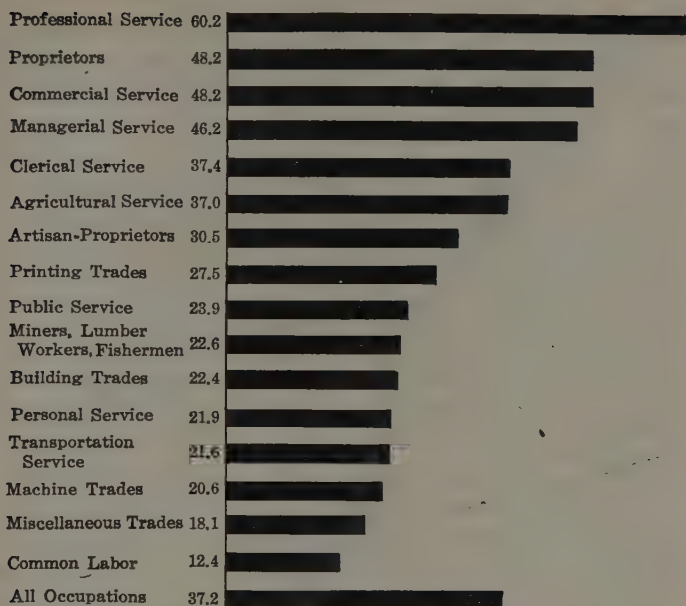


FIGURE 11. SHOWING FOR EACH OCCUPATIONAL GROUP THE NUMBER OF STUDENTS IN THE SENIOR YEAR FOR EVERY 100 IN THE FRESHMAN YEAR OF THE HIGH SCHOOL

(Data from Bridgeport, Mt. Vernon, St. Louis, and Seattle.)

studied the social composition of 514 Seattle children of high-school age who were at work. He found the situation to be just the reverse of that found in high school. Here four great labor groups — the building trades, common labor, machine trades, and transportation service — contributed over sixty per cent of the children. Likewise, in the Bridgeport evening high school, the sons and daughters of the laboring classes constituted the great majority of the enrollment, while in the trade school of that city the situation was about the same except that the representation of the laboring classes was yet larger.

As a final criterion of economic status, Counts determined in one city the frequency with which the telephone occurred in the homes of the various groups of children. It was found that

telephones are two and one half times as frequent in the homes of high-school students as in those of children attending the trade school, and seven times as frequent as in the homes of the children in the compulsory continuation classes. Furthermore, the percentage of telephones increases decidedly from year to year in the high school. Thus, we find about 39.7 of the students in the freshman year coming from homes with telephones, whereas in the senior year, this percentage is 60.3. There are also wide differences among the curricula in this respect. In the case of the girls, telephones are almost twice as frequent in the homes of those who are enrolled in the college preparatory as in the homes of those taking the commercial course.<sup>16</sup>

*The situation in rural high schools.* A study similar to that of Counts, but not so extensive in scope, was recently made by Gaiser. He determined the occupations of high-school freshmen and seniors in two Western cities and in some twenty-five towns located in an agricultural section. In general, his findings coincide with those of Counts. There were, however, differences which are worthy of note. Gaiser's study showed that the non-labor groups had a smaller proportionate representation in the high schools included in his study, and that the skilled and unskilled labor groups were correspondingly larger. His investigation also indicated that children from lower economic strata, living in rural districts, avail themselves to a greater degree of the opportunities of a high-school education than children of the same economic circumstances who live in urban districts.

Another factor which undoubtedly should be considered in comparing the two investigations is the rapid increase in

<sup>16</sup> Reprinted by permission of C. H. Judd, Editor of Sup. Educ. Monographs.

high-school enrollment which took place immediately after the World War. In the larger city studied by Gaiser, the enrollment in the first eight grades increased eighteen per cent from 1919 to 1922, while the high-school enrollment increased thirty-seven per cent; in the rural area, increase in enrollment in the first eight grades during this interval was less than one per cent, while the high-school enrollment increased twenty-nine per cent. Most of the data for Counts's investigation were collected during the years 1919-20 — at a time, perhaps, when the high schools had not entirely recovered from the depression brought on by the War, and before they had participated to any great degree in the rapid growth in enrollment which has occurred since.

It is altogether likely that much of the post-war increase in high-school population was due to the enrollment of boys and girls from the lower economic strata. It seems entirely reasonable to assume, too, that much of the increase in high-school enrollment which will occur in the future will be caused by the registration of boys and girls whose parents are employed in the lower stations in life. If so, a similar investigation made a few years hence will show the children of the professional, proprietary, managerial, and commercial groups occupying a relatively less advantageous position. The saturation point for high-school attendance has already, in their cases, been almost reached.

Another difference has to do with the agricultural group. This group is naturally not found in Counts's tables, as the group is not a normal one in cities. Gaiser's investigation shows that children whose parents are engaged in agriculture do not attend high school as well as the children of parents from the non-labor group and they do not persist in school so well, but that they are superior in both these respects to children whose parents are engaged in skilled or unskilled labor.<sup>17</sup>

<sup>17</sup> Gaiser, P. F. *Educ. Admin. and Super.* (1923), 9:537-46.

**Home conditions.** *Education of parents.* There is considerable correspondence between the amount of education received by parents and the amount received by their children. There are, of course, many exceptions to the rule. Moreover, the number of days spent in school tends to increase year by year as the school year lengthens and as the compulsory school attendance laws are pushed upward. The constant tendency to enrich the curriculum also makes its contribution. Added to this is the undoubted tendency for parents to provide for their children a little better education than they themselves received. On the whole, however, the correspondence exists.

Fathers and mothers are much alike with reference to the number of years of schooling they have received. On this point Holley says:<sup>18</sup>

This fact, which seems to indicate that men and women of approximately the same educational level tend to intermarry more often than mere chance or even propinquity would suggest, might be called "educational selection." This is a very important point when it is considered that it results in the concentrated transmission from one generation to the next of certain social characteristics which vary with the types of homes represented. It means that there is a continuity, and perhaps at times, an intensification through generations, of the tastes, prejudices, traditions, ideals, and standards which make up the social life of a home. Family traditions and ideals are thus continuous although the different members of a home come and go; the individuals separate and form new homes, but these are much like the old home in social characteristics, and especially in educational cultural standards.

*The home library.* The number of books contained in the home library seemingly bears a close relationship to the number of years of schooling children receive. Obviously, this is symptomatic of the ideals of the family, the attitude toward education, and the general cultural tone, all of which

<sup>18</sup> Holley, C. E., *loc. cit.*, p. 100.

would assist in building up a favorable attitude on the part of the boy or girl towards the school. In good homes are also found a comparatively larger number of magazines of the better type. Inability to accumulate a large library on account of financial reasons, and the possibility of using a free public library, would naturally disturb this relationship to some extent. It is probable that the relationship existing between the size of the family library and the length of stay in school can be detected in the number and character of plays and entertainments attended, and other intellectual or social avocations, diversions and recreations.<sup>19</sup>

**Failure in high school and elimination.** In the grades the pupil who fails in his work becomes retarded, and retarded pupils drop out in large numbers. From this basis it has been held that failure in high school causes elimination from high school. It is noted that this is not necessarily a question of over-age high-school students and their probable length of stay, but whether or not high-school pupils who fail in one or more subjects leave school in larger numbers than those who do not. Most of the statistical evidence at our disposal favors the conclusion that good scholarship, particularly in the first high-school years, affords a fairly reliable means of predicting length of stay.<sup>20</sup>

Probably the most important evidence supporting the opposite side of the question is contributed by OBrien's investigation. Studying the school records of 6141 pupils, belonging to eight different high schools in New York and New Jersey, he found the situation to be exactly opposite to the one we should expect. His results show that many students who do not fail nevertheless drop out of school

<sup>19</sup> Holley, *op. cit.*, p. 100.

<sup>20</sup> Cf. Inglis, A. J. *Principles of Secondary Education* (1918), p. 137.

Dynes, J. J. *Sch. Rev.* (1914), 22:396-406.

Smith, H. A. *Educ. Admin. and Super.* (1922), 8:557-72.

before the end of the freshman year. On the other hand, more than fifty per cent of those students who fail but who do not graduate persist in school until the end of the second year. Moreover, more than half of the pupils who do graduate fail one or more times. Other interesting points brought out in this study are:

- / (1) The percentages of graduates and of non-graduates that fail are almost identical.
- ✓ (2) The time extension for completing the high-school course is not in proportion to the failures.
- / (3) The number of drop-outs does not tend to increase as the number of failures per pupil increases.
- ✓ (4) A general conclusion to the effect that failure is not a prime cause of dropping out for most of the non-graduates.<sup>21</sup>

It is difficult to resolve the contradiction. It is altogether likely that failure on the part of pupils who enter high school at the normal chronological age, and who come from the upper economic and social classes, might have little to do with elimination. Failure would in all probability be conducive to elimination for those pupils who enter high school two or more years late, who find it difficult to carry the work, who are kept in school at considerable sacrifice on the part of their parents, or who come from homes where the high-school tradition is not strong. The whole question should receive further investigation. Such an investigation should take account of the subjects in which failures occur, and of the well-established causes for elimination.

We should have a better knowledge of the causes of failure. As will be shown in a later chapter, inability to do the work of the high school as it is now organized is a prime reason, but it cannot be regarded as the only reason. Little objective evidence is available to show the number of failures caused by lack of study, but teachers are inclined to

<sup>21</sup> O'Brien, F. P. *The High School Failures* (1919).



TABLE 26. CAUSES OF FAILURE ASSIGNED BY HIGH-SCHOOL TEACHERS IN LACROSSE, WISCONSIN <sup>22</sup>

	PER CENT
Lack of application.....	49.0
Absence.....	20.0
Poor foundation.....	16.6
Mental inability.....	4.7
Poor general health.....	4.4
Laziness.....	2.5
Defective vision.....	2.4
Defective hearing.....	0.4

regard insufficient study as one of the great reasons. Pupils say the same. For example, forty-four per cent of some eight thousand pupils in the high schools of the North Central Association said that lack of study was the cause of failure. Lack of attention, charged with twelve per cent of the difficulty, was the next highest contributing cause. These pupils stated that they spent about sixty minutes upon their hardest studies, about thirty minutes upon the easiest studies, and forty or forty-five minutes in preparing the ordinary lesson. About a fifth spent, according to their statements, about twenty minutes in preparing each subject. More boys than girls gave lack of study as the chief cause of failure, and boys spent on the average fifteen per cent less time in study than did girls.<sup>23</sup>

**Intent to remain in school.** A group of one thousand New York City pupils were asked at the beginning of their four-year high-school course whether or not they expected to remain in school until graduation. The careers of these pupils were followed, and it was found that the chances were even that those expecting to remain until graduation would do so. For those not expecting to remain, the chances of

<sup>22</sup> McCormack, B. E. *Sch. Rev.* (1922), 30:431-42.

<sup>23</sup> Davis, C. O. *Proceedings of the Twenty-Ninth Annual Meeting* (1924), part 1, pp. 121-23.

graduation were only one in twenty-five; for those undecided, one in eight. The data of this investigation<sup>24</sup> formed the basis for the statement that "the mere fact that a pupil reports himself as expecting to complete the course gives him nearly five times as long a probable stay as the pupil who expects not to complete it."<sup>25</sup>

It is unlikely, however, that this statement can be applied generally. Intent to remain in school varies with the locality, and while elimination figures also vary, it is probable that the formula quoted above will not apply in all cases. A number of years have elapsed since the investigation was made, and during this period the attitude toward secondary education has changed greatly. At present it would probably be found that nearly all ninth-grade pupils, according to their own statements, expect to remain until graduation (Table 27). Many of them will be eliminated. On the other hand, it remains true that the chances of graduation are small for those who express the intention of dropping out at the earliest opportunity.

TABLE 27. NINTH-GRADE PUPILS' EXPECTATION OF REMAINING IN SCHOOL, BY PER CENTS<sup>26</sup>

	EXPECTATION OF FINISHING HIGH SCHOOL		EXPECTATION OF ATTENDING COLLEGE		TOTAL CASES
	Boys	Girls	Boys	Girls	
A high school of 2000 . . .	90	92	63	52	630
A high school of 2200 . . .	88	89	62	54	711
A high school of 800 . . . .	89	92	54	60	259
A group of small rural high schools . . . . .	89	90	55	65	371

<sup>24</sup> Van Denburg, J. K., *loc. cit.*, pp. 137 ff.

<sup>25</sup> From Strayer, G. D., and Thorndike, E. L. *Educational Administration* (1913), p. 52. Reprinted by permission of The Macmillan Company, publishers.

<sup>26</sup> Data collected by the writer.

**Elimination conditioned by vocational choice.** The calling a junior-high-school boy or girl expects to follow evidently exerts considerable influence in determining the length of stay in school. Thus, Franklin found elimination to be more than twice as heavy among seventh-grade boys in Baltimore who had chosen non-professional pursuits as among those expressing professional ambitions. Approximately the same relationship existed among girls. He concluded that a lofty ambition tends to hold a pupil in school.<sup>27</sup> Such ambition doubtless owes much to home influences.

**Lack of intelligence and elimination.** In considering this topic, it is necessary to consider a new meaning of retardation, normal progress, and acceleration. In many quarters these terms are now defined from the standpoint of mental age rather than chronological age. A child who is in the grade where he should be according to his mental age is making normal progress; if he is a grade or more in advance of his mental age, he is accelerated; if behind the grade where he should be according to his mental age, he is retarded. According to this view, figures showing retardation, acceleration, or normal progress according to chronological age are meaningless, if not actually misleading. When school progress is analyzed from the standpoint of mental age, it is usually found that bright pupils are the ones who are retarded, while dull pupils are found in grades one or more years in advance of the place warranted by their ability. Retardation results because bright pupils are held back by the organization of the school, and because teachers are unable correctly to judge pupils' ability; acceleration results from the tendency to promote over-age boys and girls who have spent more than one year in a given grade.<sup>28</sup>

<sup>27</sup> Franklin, E. E. *The Permanence of Vocational Interests of Junior-High-School Pupils* (1924), pp. 38-39.

<sup>28</sup> Terman, L. M. *The Intelligence of School Children* (1919), pp. 114 ff.

Several lines of proof may be advanced to show that lack of intelligence causes elimination:

1. The level of intelligence of secondary-school students is higher than the level of intelligence for the general population. In the general population the great bulk of individuals are of average intelligence, and about as many are above as below the average. In the secondary school are found only a few of inferior intelligence, a relatively few of low-average intelligence, and many of high-average and superior intelligence. The secondary school thus selects its pupils from the higher ranges of native ability.<sup>29</sup>

2. The average level of intelligence increases throughout the high-school years. This can be caused only by the elimination of duller students. The conclusion is that those who are unable to do the work of the high school drop out. Selection is much more pronounced in the college than in the high school.<sup>30</sup>

3. When ninth-grade students are tested and their subsequent school careers checked, it will be found that the average intelligence level of those dropping out is lower than that of those remaining in school. The inevitable conclusion is that lack of ability to do the work causes elimination.<sup>31</sup>

4. Continuation-school pupils show a lower median intelligence quotient than pupils of the same chronological age who are in attendance upon school.

<sup>29</sup> For these and the following statements there is a great deal of evidence. See Terman, L. M., *op. cit.*, p. 81; Madsen and Sylvester, *Sch. and Soc.* (1919), 10: 407-10.

<sup>30</sup> Madsen, I. N. *Sch. and Soc.* (1920), 11: 298-300; Book, W. F. *The Intelligence of High School Seniors* (1922), p. 24; Hamilton, R. L. *Sch. and Soc.* (1922), 16: 416-20. Feingold, G. A. *Sch. and Soc.* (1923), 18: 443-50.

<sup>31</sup> Toops, H. A., and Pintner, R. *Sch. and Soc.* (1918), 7: 507-10; 534-39. Dickson, V. E. *Jour. of Educ. Res.* (1920), 2: 601-10. *Bur. of Educ. Bull.* (1918), no. 19, p. 19.

This was conclusively shown by Hopkins, who tested all the continuation-school pupils in five different towns and cities in Massachusetts. For comparative purposes he also tested a number of pupils from fourteen to sixteen years of age in regular schools. He found that, on every point of comparison, the continuation-school pupils were inferior to the regular school pupils in intelligence. He concluded that lack of ability to do the work demanded by the school was the great reason for pupils dropping out to go to work.<sup>32</sup>

**Lack of intelligence vs. other causes of elimination.** It is not surprising that the investigators whose results or conclusions coincide with one or more of the above statements should stress lack of ability as a cause of elimination, or that they should go so far as to assert that lack of intelligence is the one important reason for elimination, the others being subsidiary to it. Attempts have been made to explain the "conventional" causes of elimination in terms of low intelligence.<sup>33</sup>

*Retardation.* No one questions the statement that over-aged boys and girls are eliminated in large numbers, and there is plenty of evidence to show that over-aged children are, as a group, inferior in intelligence. There is no good reason for not assigning their elimination to lack of ability to do the work demanded by the school. As a matter of fact, this principle has long been recognized.

On the other hand, pupils who are a year or more advanced from the standpoint of chronological age are undoubtedly above the average in native ability or they would

<sup>32</sup> Hopkins, L. T. *The Intelligence of Continuation-School Children in Massachusetts* (1924). He summarizes in chapter 8 other investigations dealing with the same general problem, and finds them to be in agreement with his own conclusions.

<sup>33</sup> Supportive evidence for the following statements is found in references immediately preceding, as well as those in Chapters 8 and 9.

not be able to do the work. But whether or not their persistence in school can be ascribed entirely to their superior ability is problematical. They reach the ninth or even the tenth grade before the compulsory school law releases them from school, and they are close enough to the end of the course to be stimulated to remain until graduation. Perhaps these factors have their influence, as well as does their superior intelligence.

*Race and nationality.* Considerable evidence exists to show that native-born white Americans are superior in intelligence to negroes and to the foreign-born, especially those coming from the nations of Southern Europe. It seems, therefore, that intelligence can be credited to some degree for the tendency for native-born to remain longer in school than the others, though the greater elimination is not a matter of intelligence alone. It may be that the measuring scales now in use are discriminative. Moreover, neither the average negro nor the average son or daughter of the immigrant has been pointed toward the high school. A secondary-school education is not within the reach of many of our immigrants, and they are sometimes ignorant of the fact that their children may attend the secondary school.

*Sex.* Some results from group intelligence tests show the average scores for girls to be several points lower than the average scores for boys. Some hold that this is because the tests are better suited to a boy's abilities; some think that the difference is real. Certainly the greater tendency manifested by girls to persist in school cannot be explained by available data on the grounds of their superior intelligence.

*Social and economic conditions.* If one takes the results of the testing program at their face value, he will have to admit that intelligence levels vary according to social and economic status. On the high end of the scale are found the professional classes; on the low, the laboring classes. If



one's I.Q. is a gift of inheritance, and if a high I.Q. is conducive to length of stay in school, we have a reason for the large high-school attendance from the more favored social and economic strata of society. In addition to this is the fact that children from these homes have been surrounded with cultural influences, their parents have had the benefits of at least a high-school education, and the children have always been expected to attend high school.

Few will deny at least the partial truth of these statements, and it is pressing matters too far to insist that low intelligence is the sole cause of elimination. There is a great overlapping of intelligence scores when the various vocational groups are compared, just as there is an overlapping when the scores and ratings of continuation-school children are compared with regular school children, and when the scores of girls are compared with those of boys. Certainly a large number of the children of laborers are capable of doing the work of the high school.

*Lack of interest in school work.* If a child cannot master a subject sufficiently well for its meaning to be clear, it is too much to expect him to be interested. If a major portion of his school day is spent upon lessons meaningless to him, and if one such day is followed by another and another, the natural result is a desire to discontinue school. It is granted that such a condition of affairs is more likely to exist in the case of those pupils who have difficulty in getting their lessons. But we have asked, and are still asking, many capable pupils to study lessons in formal grammar, obsolete arithmetic, or algebra, the worth of which they are unable to see. They understand vaguely that they must have faith, and that later the scales will fall from their eyes and they will be able to see. It is doubtful if the average adult would continue under such circumstances. Dissatisfaction and elimination from school naturally results for boys and

girls whose belief in the efficacy of the school is not buttressed by the encouragement of parents who believe in the school.

**The junior high school as a remedy for elimination.** Through its curriculum vitalized by the elimination of useless materials, through adaptation of methods and subject matter to individual differences, and through its program of guidance, the junior high school will, it is hoped, help solve the problem of elimination. By bridging the gap which existed so long between the eighth and ninth grades, and which has not yet been entirely eliminated, it has been expected that more boys and girls would continue into the ninth grade. It has been urged that by adding the ninth grade to the junior high school, thus doing away with the convenient stopping-place formerly recognized by graduation from the "common school," more pupils will remain another year.

The general impression is that the junior high school has been, to some degree, successful in accomplishing this task. It is difficult, however, definitely to arrive at the amount of influence exerted by this new unit of the school. Increased population means an increased school attendance, and this tends to obscure the real situation. There is a general tendency towards increased attendance in the high school, which further covers influence of reorganization. However, figures available from many school systems, comparing enrollment under the old plan and the new, indicate greater holding power on the part of the junior high school. A large percentage of junior-high-school principals and superintendents state positively that under the junior-high-school system elimination is materially reduced.<sup>34</sup>

**Conclusion.** Although there has been a gradual increase

<sup>34</sup> Briggs, T. H. *The Junior High School* (1920), pp. 330-31; Douglass, A. A. "The Junior High School," *Fifteenth Yearbook* (1916), part 3, pp. 101-13; Koos, L. V. *The Junior High School* (1920), pp. 20-26.

in the number of pupils retained in the upper grades, the problem of elimination still remains in much the same proportions as twenty years ago. As one searches for the reasons, he is likely to be convinced that, after the general level of education which society sets for its members has been reached, withdrawals from school are bound to occur. This has been true in the past, and it will probably be true in the future. In other words, society recognizes that the average man needs an eighth-grade education. When the average boy finishes the eighth grade, he reflects this opinion in his assumption that he has, for all practical purposes, completed his education.

In the case of an individual pupil, a consideration of the factors discussed in this chapter will assist in predicting probable length of stay in school. These factors are so complex and interwoven, however, that it is probably a mistake to single out one and neglect the others. Lack of intelligence as indicated by present measurements, for example, undoubtedly plays an important rôle. We are liable to error when we conclude that lack of intelligence is the one important cause of elimination.

Studies of large numbers of schools are extremely valuable; the most enlightening investigations, however, are those of single school systems where administrative officers are confronted by concrete situations in which they try to understand individual characteristics of boys and girls.

#### TOPICS FOR DISCUSSION AND INVESTIGATION

1. Superimpose a curve drawn from the percentages in Figure 1 upon a curve drawn from data given in Table 20. Assume, in Figure 1, that pupils in the first grade are all six years old, those in grade six twelve years old, etc. What is the result?
2. Add curves to show the rates of elimination in your state and city. Are there any marked differences? How do you account for them?
3. If the data given by Counts are representative of conditions existing

throughout the country, do we really have a democratic system of education?

4. Some foreign countries make financial provisions for certain boys and girls who otherwise would be unable to attend school. Discuss the advisability of such a policy for this country.
5. Suppose you were asked to classify 1000 seventh-grade (or ninth-grade) pupils who have just enrolled in school upon the basis of their probable length of stay. What criteria would you use in making your judgments? What importance would you attach to each of these criteria?
6. Should retardation be defined in terms of chronological age or mental age?
7. Should the school strive to hold all its pupils?
8. Compare the elimination rate of secondary-school pupils with the elimination rate of college students. (See Koos, L. V. *The Junior College*.)
9. Compare the rate of elimination in a city having a system of junior high schools with the rate of elimination in a city having no junior high schools. Explain existing differences.
10. How would you undertake an investigation to determine the effect of the junior-high-school reorganization upon elimination?

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## CHAPTER X

### EDUCATIONAL AND VOCATIONAL GUIDANCE

**The meaning of guidance.** Growth of industry and great expansion of the number of possible callings long ago rendered the choice of a vocation difficult. No social agency existed through which the individual might receive assistance, hence the school — somewhat tardily — assumed this function. Ways and means have been devised to accumulate information about the various vocations and to put the individual in possession of a reasonable amount of this information so that he may more wisely choose the work which will engage his efforts. Similarly, methods have been discovered to help young people to analyze their interests and abilities, so that their ultimate decisions may be more intelligent and satisfactory. Once a decision has been reached, adequate preparation must be made, a step which again calls for intelligent action. As the problems of vocational guidance have come to be better understood, it has been found that choice of a vocation and preparation for it must be followed, especially in the cases of young workers, with guidance in the actual process of entering an occupation, as well as in the further learning and adjustment necessary if progress is to be made. Vocational guidance thus aims “to help the individual to choose, to plan his preparation for, to enter upon, and to make progress in an occupation.”

That pupils should have help in making the decisions necessary for a successful school career is everywhere conceded. The array of subjects is so extensive as to be bewildering when boys and girls are left to discover for themselves their content and purpose. In the compre-



hensive high school several curricula and many diverse subjects are offered, from which choice must be made. To these pupils have been coming, and without direction they will continue to come, to find themselves in a state of mental turmoil and confusion. Their selections have often been made with no consideration of their own ability, and have in all too many cases been based upon caprice. Even though a well marked interest or special ability is present, it is highly probable that numerous mistakes will be made in the unguided selection of subjects. The guidance program, therefore, includes definite provisions to assist pupils in solving the problems which arise in connection with their school careers.

True guidance, however, means more than assistance to pupils in solving their vocational problems or in planning their school careers. It is more than a program of testing and administrative manipulation of groups of pupils; it is an educational philosophy which permeates the very fabric of the school. Guidance is based, on the one hand, upon the abilities and needs of individual pupils; on the other, upon the activities in which they engage as children or will engage as adults. It involves discovery of individual capacities and interests, and adaptation of school facilities so that these capacities and interests may be developed to the advantage of the individual and of society. More specifically, this means that we must utilize available knowledge of mental and physical traits of children in guiding their development. Since all development, and therefore all education, takes place through interaction between the individual and his environment, it is imperative that we analyze the environment into its major divisions, and that we extend our analysis to include the important subdivisions of the larger fields. The general idea of guidance thus applies to education for citizenship, worthy home member-

ship, health, moral and ethical character, and leisure-time pursuits, as well as to the problem of vocation or later school career.

### GUIDANCE THROUGH SCHOOL STUDIES

**Personal counseling.** Many large school systems have provided directors who organize and supervise the work in guidance. In the small school this function must be assumed by the principal or by a teacher who can give only part time to it. Whether the school be large or small, the pupil should have some one to whom he can go for personal advice and counsel about his problems. If the person in charge of vocational guidance is able to act as a consultant, so much the better; if not, this duty should be assumed by one or more teachers. Such teachers must be familiar with the theory and practice of guidance, and must possess a fund of information concerning the more important vocations. Above all, they must be sympathetic, personally interested in the student, and acquainted with his interests, ambitions, and abilities.

Data concerning the student will need to be collected. Many of these data will be of use to the principal and to other teachers, and no doubt many items of information will have been collected in the elementary grades. This information should be available to the counselor as a matter of course. A cumulative record card should be provided upon which are noted such points as success in preceding grades or subjects, intelligence rating, chronological age, teachers' judgments of the pupils' interests and abilities, home conditions, health, academic and vocational interests, and the like. This record should be begun early in the elementary grades, and should accompany the pupil as he progresses through school.

Closely allied to personal guidance is what is sometimes

termed "remedial guidance." The difficulties of retarded or failing pupils are analyzed, and directions and suggestions are given to aid the pupils in reestablishing themselves in their regular classes. If the enrollment of the school is large enough to permit it, special classes may be provided for these pupils where they are given the attention they need.

The secondary school a "finding place." It has long been a belief among schoolmen that a pupil should "find himself" during his school career. It is thought that proficiency in certain studies means that the pupil should succeed in occupations allied to them, or that an interest aroused in certain of the school subjects will lead to an interest in an allied occupation. For instance, if a student shows proficiency in mathematics, he may become interested in engineering; if he shows aptitude in the biological sciences, he may become interested in agriculture; or if he shows ability in drawing, he may later take up the study of design. Up to the present time, however, little connection has been made between the subjects of study and outside occupations. A reason for this is that the studies have been organized in too formal a manner, and have been given for the sake of the information contained in them. Another is that teachers have not had the right point of view. Too often they have been content to teach the information contained in a course, and have done little to correlate the separate courses with each other or with out-of-school interests. Rightly conceived, school subjects reflect the social and industrial activities of the community and thus assist in laying a broad foundation of useful experiences needed in understanding the several vocations. Rightly conceived, also, they show the possibilities of the later studies pursued in high school and college, and thus become one of the most important agencies to be used in giving the pupil information and guidance in his subsequent educational career.

Vocational and educational guidance will be greatly facilitated through the reorganization of the subject-matter commonly found in the seventh, eighth, and ninth grades, and through allowing a degree of choice on the part of the pupils as to the courses they will study. Elimination of useless and obsolete material will make it possible to spend the time thus used upon material of greater social significance, and reorganization of subject-matter will materially decrease the amount of time otherwise spent in review. The amount of time which will thus be gained cannot be accurately stated, although Hill estimates, after examining 169 courses of study of representative schools, that about 40 per cent of the work, under the 8-4 plan, outlined for the seventh and eighth grades, is review.<sup>1</sup>

Final organization of the program of studies for the junior-high-school unit will probably provide a certain amount of differentiation to explore interests and aptitudes and otherwise to make provision for individual differences. This is regarded in many quarters as one of the most important means of guidance. At present the amount of time devoted to optional studies varies with the year and is conditioned by the individual qualities of the pupil.

**General courses.** General courses are fast taking the place of the specialized courses of the old seventh, eighth, and ninth grades. General science has almost entirely supplanted physiography, general mathematics is often found in place of arithmetic and algebra, and general social science is superseding the customary history and geography. Separate, uncoördinated courses in reading, composition, penmanship, spelling, and grammar are being welded into a more unified English, and even in foreign language there is a beginning tendency to provide a "general" first-year course.

<sup>1</sup> Hill, C. M. *Bull. of the Mo. State Normal*, Springfield (1915), vol. 10, no. 3.

The pedagogical principles back of these changes are not new, and many of the revisions now being undertaken were suggested or recommended a number of years ago. Young students do not need and are not interested in specialized subject-matter. They need an understanding of the problems commonly met in their daily lives. Interest will be attached to these if it is attached to anything. Moreover, little is gained and much is lost through attempting to keep subject-matter within the lines drawn by specialized students. When an important question arises, one does not consider whether it belongs to the domain of this or that science — he uses in his attempted solution whatever data he has at his disposal, no matter the source. General subjects represent little more than the application of the educational principles of relative values, interest, and arrangement of subject-matter in terms of the learner.

*General science.* Perhaps greatest advance in the application of these principles has been in general science. The popularity of this subject is evidenced by the fact that it is to-day the most important science course, from the standpoint of students enrolled, in the secondary school. It has for its field problems which concern the average person and which are solved through the application of scientific principles. It does not matter whether these principles are from the realm of physics, chemistry, or biology; they are used as they are needed.

Textbooks for general science courses have passed through an interesting development — a development which reflects the crystallization of thought upon subject-matter and method. The first were little more than a series of introductions to the specialized sciences. By degrees this style of writing was left behind. In the next stage, authors attempted to use one science as a theme or core of treatment, with other sciences in subsidiary or auxiliary positions.

Needless to say, a text almost invariably gave an unmistakable clue to the special scientific interest of the author. This phase of development has not been entirely outgrown, and many texts of this nature are still in use. However, a majority of the most recent books have broken away from the method, and some of them quite successfully draw from the various scientific fields the material needed for the problems they present.

*Composite mathematics.* Reconstruction in mathematics has not progressed so far. The principle is the same — use should be made of arithmetic, algebra, geometry, or even trigonometry, as one or all of these are needed in solving mathematical problems. Exercises must, of course, be selected which are within the range of the pupil's intellect, they should be problems which the pupil will have some interest in solving, and they must be presented concretely. Down to the present, most textbooks produced for use in the junior high school have some sections primarily algebra, others sections primarily arithmetic, and others primarily geometry. The exponents of general mathematics are somewhat divided upon the question of amalgamating arithmetic, algebra, and geometry. Some claim that this cannot be made as complete as the amalgamation of the sciences; others hold the opposite view. It seems, however, that a general mathematics based upon the uses to which its principles are applied rather than upon the divisions of the field, is the end toward which we are progressing.

*Social science.* Geography has not yet been correlated as it should be with history, nor has history been correlated as well as it undoubtedly will be with community civics and elementary economics. A common practice for relating these subjects is to schedule them for alternate days, with an attempt to treat similar topics in contiguous class periods. The geography of New England could be studied one day,



for example, and aspects of the colonial period in history the next. Many cross-overs could be made, although in our example the differences in chronology could not be entirely overcome. One final outcome will probably be a history-geography which properly blends what are now two separate subjects. Such an arrangement has long prevailed in some of the European secondary schools, notably those of Germany. Similar changes will probably come in the organization of the other social sciences.

*General foreign language.* A number of years ago the suggestion was made that a course in introductory foreign language be substituted for the usual first course, which has been and is almost entirely preparatory to later work. Student mortality has always been high in foreign-language courses. About half of those who enroll in the first year never pursue their study any further, and about three fourths turn to other subjects after the second year. Hence the need of an introductory course which shall be worth while for its own sake and which will show the pupil the field covered by foreign-language courses. In such a course an attempt should be made to interest pupils by putting into the foreground some of the general principles of language structure and by giving them insight into the rich fields of comparative philology and comparative civilization.<sup>2</sup> The course should also contribute toward a better mastery of English expression. It should be open to any one who wants to know in a year what Latin or French or German is.

Little progress has been made toward the organization of a course in general or introductory foreign languages. Besides great ingenuity and inventive power, the task demands extensive and thorough knowledge of the languages, great skill in teaching, and a comprehensive grasp of educational principles. Latin is favored as the basic language for the

<sup>2</sup> Judd, C. H. *The Psychology of High-School Subjects* (1915), pp. 216, 245.

course, on account of its relation to the romance languages and to English. A few promising experiments are now being made<sup>3</sup> and the first textbooks have made their appearance.

It will be quite evident that, in addition to supplying the most valuable subject-matter, general courses provide an important means of educational diagnosis and guidance. Opportunities are provided for the pupil to test his abilities and interests, and he may gain acquaintance with the fields of knowledge so that later choice of specialized subjects may be more intelligently made. Again it is evident that the possibilities of the general courses can be realized only if pupil and teacher are cognizant of the situation, and only if plans for guidance are definitely laid.

**Try-out courses.** A scheme which in theory has met with considerable approval provides various sorts of shops through which pupils are rotated and in which they acquire first-hand experience of a number of the occupations. Under the Ettinger plan, which was one of the first in the field, children at the beginning of the seventh grade, having chosen between regular academic and industrial work, are divided into sections for woodwork, machine-making, millinery, pasting novelty work, power-machine operating, etc. The admitted purpose of these nine weeks "rotating industrial classes" is vocational guidance, and an endeavor is made to find the work for which the pupil is best fitted. Marked deficiency in one of the nine-weeks' courses results in a return to academic work until the next shift.<sup>4</sup> Under the plan in use at Rochester, New York, the second semester of the seventh grade is used as a "try-out" term. All the boys are given experience in at least two of the industrial

<sup>3</sup> Cf. Van Denburg, J. K. *The Junior-High-School Idea* (1922), chap. 8.

<sup>4</sup> Ettinger, W. L. *A Report on the Organization and Extension of Prevocational Training in Elementary Schools*. Department of Education, New York City (1915).

shops, and all girls devote one period per day to the various branches of household arts. Toward the end of the seventh grade a choice is made of academic, commercial, industrial, or household-arts work, which is to be pursued in the eighth grade. These lines of work allow a continuance of the industrial try-outs of the seventh grade, and they serve as general courses of industrial information. If a pupil has selected the wrong course, he can transfer with small loss of time to another. Separation of courses in the ninth grade is practically complete, although some cross-over privileges are still available. Industrial courses are preparatory for, and have corresponding outlets in, the senior high school.<sup>5</sup> Under one form of organization or another, try-out courses of an industrial nature appear in many places.

For a time this plan of guidance lost in favor to some extent on account of the difficulty encountered in providing suitable shop facilities, and because contact can be made at best with only a limited number of vocations. The last difficulty is obviated to a considerable extent when care is taken to make the exercises in wood, metal, electricity, etc., include the basic factors of as many vocations as possible. Industrial try-outs are rightly regarded as an important means of increasing the general fund of the pupil's experience, upon which depends his ability to gain understanding of the vocations. More recently, the general shop has been appearing, especially in small schools. The work is organized as a series of projects, one of which may, for example, involve exercises drawn from wood-turning, forge work, and perhaps electrical wiring. The educational principles behind the general shop are similar to those underlying the general academic subjects.

From the pedagogical point of view, the principle of bringing the pupil into personal contact with an occupation is

<sup>5</sup> Lyman, R. L. *Sch. Rev.* (1920), 28: 178-204.

decidedly better than a book course in which the occupation is treated. However, if this work is conducted in a formalized way it is possible to make it as barren of results as the method of self-discovery through the regular school studies has been in the past. The plan should be supplemented by instruction and by study of the occupations and those related to the work done, with a consideration of personal fitness of the occupation in question.

The scheme is more adaptable to small high schools than appears at first glance. Courses in woodwork and home economics are frequently available, and agriculture often is taught. A series of projects involving carpentry, cement work, electrical wiring, gas engines, and agriculture is not without the possibilities of the small high school. The course in home economics could be strengthened and be made to include vocational information and insight into the occupations for girls and women which are derived from the subject-matter of these courses.

**Life-career classes.** In many junior high schools classes have been organized for the specific purpose of studying the different vocations; in others, vocations receive attention in civics classes. The eighth grade is often chosen as the strategic point for the location of this work, since it is then taken just before the compulsory school law releases the pupil, and since it also comes prior to the more differentiated curriculum of the ninth grade. Impartial study is made of the more important occupations, and pupils are given the opportunity of considering in more detail the particular occupations in which they are interested. An abundance of literature in the form of books, pamphlets, and magazine articles, descriptive of the various trades, occupations, or professions, is now available.

One of the important objectives of this course should be to ingrain an habitual method of studying occupations, since it

is both probable and desirable that children continue for an indefinite period to learn about occupations. The members of the class should be made conscious of the method, and by repeated use it should be so thoroughly learned that it will become a permanent mental possession. One of the most complete outlines yet worked out of the points to be included in the study of a vocation is shown below:

- I. General statement concerning the vocation:
  1. Value of the vocation as a social service.
  2. Duties of one engaged in it.
  3. Number engaged in it in locality.
  4. Relative number engaged in it in general, with its probable future development.
  5. Relative capital invested in it.
- II. Personal qualities demanded:
  1. Qualities of manner, temperament, character.
  2. Mental ability.
  3. Physical demands.
- III. Preparation required:
  1. General education.
  2. Special or vocational education.
  3. Apprenticeship conditions.
  4. Experience required.
- IV. Wages earned by workers:
  1. Range of wages made (table showing distribution of all cases).
  2. Average wage per week.
  3. Relation of wage to length of experience and preparation.
- V. Length of working season, working week, working day, etc.
- VI. Health of workers:
  1. Healthful or unhealthful conditions.
  2. Dangers, accidents, or risks.
- VII. Opportunities for employment:
  1. In local community.
  2. In general.
- VIII. Organization of industry, including the relation of the worker to his fellow workers, his employers, and community.

## IX. Status of the workers:

1. Opportunities for advancement.
2. Time for recreation and enjoyment.
3. Adequate income for recreation and the comforts of life.
4. Any other items of peculiar interest in this connection.

X. Biographies of leaders in the vocation.<sup>6</sup>

— *The Grand Rapids plan.* At Grand Rapids, Michigan, Principal J. B. Davis developed a plan of studying vocations in connection with the other school subjects. In the seventh and eighth grades this work is allied with English and geography, and all exercises are for composition, either oral or written. Accounts of various trades, professions and industries are given, and the value of an education as a prerequisite to them. Biography is also studied extensively. The different topics are simple in nature and adapted to the interests and capacities of pupils of this age. In the ninth grade the study becomes more personal and enters into more elaborate biography. The pupil is led to consider his personal relation to the industrial world, the desirability, difficulties, and advantages of his parents' occupations, and the biographies of successful representatives of the callings in which he is interested. Somewhat the same plan is carried out through the remaining grades of the school, although as the pupils grow older and gain in experience their studies approximate those an adult would make.

A notable feature of this plan is the thorough study that is given in the last two grades of the different schools and colleges, which at least some of the pupils will later attend. Those who have decided upon a college career are expected to take a special interest in some school and to acquaint themselves, through its catalogues and by interviews with its graduates, with the type of work it offers. Many of the

<sup>6</sup> *Bur. of Educ. Bull.* (1918), no. 19, pp. 17-18.



problems pertaining to higher education are studied in detail. If, however, the student has definitely decided that he will not enter college, his line of work is varied accordingly.<sup>7</sup>

#### GUIDANCE THROUGH EXTRA-CLASS AGENCIES

**Speakers from without the school.** The practice is frequently followed of having speakers who have had successful careers in business or the professions address the students upon the merits of the work in which they are engaged. The value of this method is increased when the speaker is made to understand the problem of vocational guidance, and is perhaps furnished with an outline of topics to be treated in his talk. Otherwise, his remarks may run almost exclusively to the general benefits of an education, the opportunities of the present generation, his own belief in the schools and what they stand for, etc. In favor of this practice it can be said that it is a means of bringing the pupils in contact with business and professional men, and of stimulating an interest in the school on the part of the community.

**Trips to industrial establishments.** Trips taken to industrial establishments are perhaps of less value as a means of aiding the pupil in reaching a vocational decision than for acquainting him with industrial processes and enlarging his vision of industry in general. The time consumed by such an expedition and the play spirit which characterizes the pupils often seem to overbalance the value received. When the trips are judiciously planned and the pupils are given preliminary instructions, with a list of points for which they will be held accountable, these objections can be to a large degree overcome.

**Work during out-of-school hours and vacations.** Many boys and girls work in stores, drive wagons or cars, deliver papers, and work at odd jobs during Saturdays and after

<sup>7</sup> Davis, J. B. *Vocational and Moral Guidance* (1914).

school. Many are employed throughout the entire vacation period. Although little used in the past, employment during out-of-school hours and vacations provides a valuable means of testing aptitudes and of gaining vocational insight.

Usually, these young people see no connection between the work they are engaged in and a later career. Many would prefer to do anything else than the work that occupies their out-of-school hours, and regard it merely as a means of earning money. While this is in itself worthy, they should be led to see that the summer vacation offers a chance for first-hand acquaintance with the vocations, and school officials should recognize it as a laboratory of the first class. A boy should have the idea fixed in mind, when he enters employment of this sort, that it will be profitable for him to find out all he can about his work with reference to its desirability as a permanent occupation. The school has an excellent opportunity to help pupils estimate their work correctly, and to serve as a clearing-house where each pupil may learn from others what they are doing and how they regard their work. Here especially lies the opportunity of studying the means offered in the local community for future occupations.

Numerous other activities which have recently been made a part of the regular school work, such as boys' and girls' clubs, scouting, Junior Red Cross, home gardens, thrift societies, etc., may be used to reinforce and supplement the work in guidance.

**Go-to-high-school campaigns.** In order to arouse interest and to acquaint elementary-school pupils with the work of the high school, active "selling" campaigns have been launched in many places. The following quotation describes a plan used in Cleveland to interest elementary pupils in the high school:<sup>8</sup>

<sup>8</sup> Miller, C. R. *Sch. and Soc.* (1922), 16: 557-58.

The daily newspapers of the city coöperated by carrying editorials on the subject giving high-school education their strong approval. Some of the high-school newspapers published editions for dissemination among the eighth-grade pupils. High-school pupils talked before groups of eighth- and ninth-graders, drawing from their own experience to paint the picture of high-school education.

The outstanding effort of the campaign may be seen in a forty-eight-page book with the title *Give Yourself a Fair Start*, compiled and edited by the director of publications. This is attractively printed and generously illustrated with dozens of photographs showing scenes typical of high-school work, social life, sports, and other extra-curriculum activities. Together with the photographs and explanations of high-school activities are testimonials written for the most part by former students of the Cleveland high schools. These are more convincing than treatises and sermons in emphasizing that education is essential to those who would succeed in life.

Throughout the book there is a definite vocational-guidance trend. An effort is made to show the connection between the studies pursued in high school and the activities and responsibilities of post-school life. . . .

Every boy and girl in the eighth grade receives a copy of *Give Yourself a Fair Start* several weeks before the close of the eighth school year. The book is the pupil's property to do with as he pleases.

It is first carefully read in class, following which it becomes the basis of discussions of high-school courses. Then it is taken home so that the parents may read it and talk over with their children the high-school problem. In both the high schools and the junior high schools the book is used in vocational-guidance work, especially in cases of children who are thinking of withdrawing from school. It has served to keep many in school to complete their courses. . . . The effort to convince both parents and children of the advantages of a high-school education must be continuous, especially in Cleveland, where sixty-five per cent of the children are of parents who emigrated from Europe.

### THE VOCATIONAL DECISION

**Choice of vocation.** Sooner or later every pupil must decide upon the work he is to do. For some a tentative decision will come relatively early, for they cannot or do not

remain in school. If these boys and girls know something about the places likely to be open to them, if they have considered their own interests and abilities, and if they can eventually engage in the right kind of work, they will be more efficient economically as well as happier. For those who can remain in school, decision may be delayed. These more fortunate pupils should, however, consider the question of vocation. Pressure should not be exerted, but guidance should be given. Their choices, tentatively held or otherwise, merit consideration; they should gain an idea of the time at which their decisions must finally be reached.

A definite objective of the whole junior-high-school program is to provide a fund of experiences and a background for choice. The senior high school, with its several lines of more or less specialized training, makes choice among industrial, professional, commercial, or agricultural lines advisable by the end of the ninth grade. Under the old system this place was reached a year earlier, and pupils came to it without the benefits of the guidance program. Again, the senior high school should be organized with sufficient flexibility to allow transfer from one curriculum to another, although it can hardly be expected that cross-over privileges without loss of time can be granted the student. It is entirely possible that the point for differentiation has not been correctly located; if such is the case, it will likely be found that differentiated curricula should begin later rather than earlier.

An opinion which is widely held, at least in the popular mind, should be dispelled. It is that each of us is particularly fitted for one (and perhaps only one) vocation, if we only are able to find it. This belief is doubtless wrong. Special abilities do exist, but general abilities which permit practically equal success in several vocations also exist — probably to a greater degree than special abilities. For the

most of us satisfaction and interest in work result more from voluntary decision based upon industrial knowledge than from discovery and utilization of special talent; dissatisfaction and lack of interest come when no freedom of choice is possible, when one feels that he has been the victim of circumstances.

**Factors affecting vocational decision.** It should be possible to isolate at least some of the factors which exert an influence upon the decision of a vocation. Such special talent as musical ability, if discovered and cultivated, undoubtedly is one such factor. Similarly, more than average ability in abstract thinking, in learning intricate physical coordinations, or in dealing with people, undoubtedly plays a part in determining what some persons will do. It is unquestionable, also, that certain economic and social forces operate to influence the vocational decision. As the program of guidance goes forward, these factors will be isolated and their influence will be better understood. Meanwhile, it will prove helpful to ask how occupational choice is related to such factors as parental vocation, the esteem in which the different occupations are held by society, the numbers already engaged in the various vocations, and general intelligence.

*Parents' vocation and occupational choice.* It is commonly believed that a son usually chooses an occupation other than that followed by his father. Perhaps the father, realizing the limitations of his own occupation and desiring his son to aim higher, advises against the work in which he is engaged; perhaps the son arrives at these and similar conclusions independently. At any rate, such data as are available go to show that boys of junior-high-school age do not select the occupations followed by their parents. This was true for seventh- and eighth-grade boys in Oakland, California; it was likewise true for thirteen-year-old boys in Springfield,

Illinois. Many of the rejected occupations were stable, yielded fair incomes, and were desirable from almost any standpoint.<sup>9</sup>

But the hopes entertained by many parents for their children are not always fully realized. In Chapter IX it was shown that the American secondary school cannot be regarded otherwise than as a selective agency, and data have from time to time been presented which support the statement that selection is, in part at least, on the basis of social and economic status and intelligence — factors seemingly closely related. Relationship between amount of education and vocational level undoubtedly exists. From the vocational standpoint the outcome is that, while children may enter different vocations from those which engage their parents, a tendency is manifest for them to remain upon the same general social and economic level. Children of the professional and business classes patronize the non-vocational curricula, while children from the business, skilled labor, semi-skilled labor and unskilled labor groups tend to enroll in the vocational curricula. There are of course many individual exceptions to these statements, and it is to be hoped that the day is far distant when such exceptions will be infrequent.

*Social approval and preferred vocations.* When comparisons are made between the vocational preferences of pupils and the vocations of their parents, it is nearly always found that the boys and girls have ambitions which rank considerably higher than the occupations in which their fathers are engaged.<sup>10</sup> Higher executive and professional callings, and semi-professional, managerial, and higher commercial positions are the objectives of the majority. These vocations are the ones which are generally regarded as desirable, not only from an economic, but also from a social standpoint.

<sup>9</sup> Sears, J. B. *Sch. and Soc.* (1915), 1:750-56. Ayres, L. P. *The Public Schools of Springfield, Illinois* (1914), chap. 13.

<sup>10</sup> Cf. Proctor, W. M. *Educational and Vocational Guidance* (1925), p. 4.



Many boys and girls will be forced to enter callings other than those decided upon during their secondary-school days for the simple reason that positions they prefer will not be open to them. When tables of their vocational selections are compared with United States Bureau of the Census tables, showing the proportion of the total population of the country engaged in the various gainful pursuits, it at once becomes evident that places cannot be found in the so-called higher occupations for all who desire to enter them (see Table 28). This statement holds even when allowance is made for the large number of boys and girls not attending secondary schools. Many will therefore be forced to accept less ambitious positions — a fact which cannot be ignored in a plan of guidance.

TABLE 28. PERCENTAGES OF 7000 ILLINOIS HIGH-SCHOOL SENIORS CHOOSING VARIOUS OCCUPATIONS COMPARED WITH PERCENTAGES OF ALL PERSONS OVER EIGHTEEN YEARS OF AGE ENGAGED THEREIN ACCORDING TO THE 1920 CENSUS <sup>11</sup>

OCCUPATION	BOYS		GIRLS	
	Seniors	Census	Seniors	Census
Clerical work.....	3.7	4.3	23.9	14.7
Engineering.....	30.4	0.7	0.4	0.1
Farming and forestry.....	9.6	28.8	0.1	10.7
Law.....	6.8	0.4	0.2	0.02
Medicine.....	7.1	0.7	5.7	2.3
Philanthropic work.....	0.9	0.5	0.7	0.5
Public entertainment.....	1.4	.3	2.9	0.8
Publicity.....	3.6	0.1	1.4	0.1
Manufacturing and mechanical (skilled).....	5.2	25.0	0.2	19.6
Transportation (skilled).....	1.5	6.8	0.1	2.3
Teaching.....	9.8	0.6	58.9	9.0
Trade.....	16.7	10.9	3.6	10.0
Miscellaneous professions.....	2.7	0.3	1.6	0.5
Miscellaneous.....	0.7	20.6	0.4	29.4

<sup>11</sup> Odell, C. W. "Conservation of Intelligence in Illinois High Schools," *Univ. of Ill. Bur. of Educ. Res. Bulletin* (1925), no. 22, p. 37.

*Intelligence and choice of vocation.* One would expect vocational choices to vary with intelligence, just as selection of subjects varies. This factor seems to be at work as early as the first year of the junior high school.<sup>12</sup> In a large group of junior-high-school pupils, more boys of high intelligence expected to enter the professions, and conversely, the lower the intelligence the greater the likelihood of interest in the skilled trades. Girls of higher intelligence selected teaching or similar vocations; girls on the lower end of the scale chose clerical work in larger numbers.

An extensive study of high-school seniors in Massachusetts<sup>13</sup> indicated that, on the whole, the level of intelligence manifested by the boys in the professional group and the girls in the business group was high, while the boys in the business and the artisan groups, and the girls who expected to be clerical workers, ranked low. Odell, who studied the intelligence of seniors in Illinois high schools, found some variation in the median intelligence quotients in accordance with the type of occupation pupils expected to enter (Table 29). This difference was small, however, the medians ranging from 102 for prospective clerical workers to 111 for those interested in philanthropic work. The most striking point brought out in the Illinois investigation is the large range in intelligence quotients exhibited by every one of the vocational groups. As Odell points out, the number of seniors having low intelligence quotients planning to enter vocations requiring a high degree of intellectual ability is very large, while the number of those manifesting high intelligence planning to enter vocations seemingly not making great demands upon intelligence is also large. The same situation was found to exist in the case of senior girls

<sup>12</sup> Franklin, E. E. *The Permanence of the Vocational Interests of Junior High School Pupils* (1924), pp. 21-23.

<sup>13</sup> Colvin, S. S., and MacPhail, A. H. *Bur. of Educ. Bull.* (1924), No. 9.

in Illinois high schools. Book's investigation of Indiana seniors <sup>14</sup> yielded similar results, as did Trabue's study of North Carolina high-school pupils.<sup>15</sup>

TABLE 29. DISTRIBUTION OF THE VOCATIONAL CHOICES OF SENIOR BOYS IN ILLINOIS HIGH SCHOOLS WITH REFERENCE TO THEIR INTELLIGENCE QUOTIENTS <sup>16</sup> .

VOCATIONAL CHOICE	INTELLIGENCE QUOTIENT								Total	Median
	60-	70-	80-	90-	100-	110-	120-	130-		
Clerical work.....	1	1	8	37	34	20	8		108	102
Engineering.....		5	36	155	309	255	99	9	868	108
Farming and forestry....		3	16	73	100	56	16	2	266	104
Law.....		3	5	33	60	53	31	4	190	109
Medicine.....		1	8	54	67	48	10	1	189	105
Philanthropic work.....			1	6	5	7	6		25	111
Public entertainment.....			2	11	13	10	2		38	105
Publicity.....			3	10	47	32	8		100	108
Manufacturing and mechanical (skilled)....		1	6	40	59	35	10	6	157	105
Transportation (skilled)..			1	10	18	10	4		43	106
Teaching.....			18	80	107	54	17	1	277	104
Trade.....		1	22	104	170	120	45		462	106
Miscellaneous professions.			3	10	36	15	10		74	107
Miscellaneous.....			1	5	10		2	3	21	105
Total making choice.....	1	15	130	628	1035	715	268	26	2818	106
Undecided.....	1	8	42	208	257	192	70	1	779	105
Total answering.....	2	23	172	836	1292	907	338	27	3597	106
Not answering.....	5	19	126	467	638	333	101	4	1693	104
Grand total.....	7	42	298	1303	1930	1240	439	31	5290	105

Interpretation of the results of these investigations is not easy. In the first place, the accuracy of the scores may be questioned. Group intelligence tests were used throughout, and were not given under uniform conditions. The investigators were quick to recognize this fault, but they are of the opinion that the results are sufficiently accurate to show general trends. Second, and more important, is the question of the type of guidance that is to be given. Should an individual whose I.Q. is less than 110 or 115 be advised

<sup>14</sup> Book, W. F. *The Intelligence of High School Seniors* (1922), chap. 7.

<sup>15</sup> Cited by Odell, C. W., *loc. cit.*

<sup>16</sup> Odell, C. W., *loc. cit.*, p. 38.

against preparing for a professional career, and should one whose I.Q. is above 105 or 110 be discouraged from entering the skilled trades? As yet these questions cannot be answered satisfactorily, both because the degree of intelligence needed for success in each of the several callings is not definitely known, and because important social problems are raised whose solution is by no means certain.

*Needed investigation.* Perhaps the only way we can secure anything like complete knowledge of the manner in which individuals choose their occupations and the reasons for change of mind is by making a large number of case studies. If representative groups of boys and girls could be followed throughout their school careers, if the guidance facilities of the school could be taken into account, if home conditions and other environmental elements could be given their proper weight, if the importance of general intelligence could be determined, and if all these factors could be checked against the vocational decisions pupils from time to time express, we should know better how to plan the guidance program. We also need statistics to show the effectiveness of training given in special curricula, both in high school and in college. If our large number of representative cases could be followed, not only through school, but for several years thereafter, we should have a basis for planning the guidance program. The organization of the secondary school might be profoundly changed.

**Change of mind regarding future occupation.** As yet insufficient investigation has been made to warrant more than tentative conclusions regarding the permanence with which pupils hold to their choices of vocation. According to their own testimony, they renounce one vocation and turn to another because they believe themselves unfit for the one first selected or better fitted for the second. These reasons are not identical, but there is sufficient correspondence for

the statement that real or imagined fitness for another vocation is by far the most important reason for a change of decision. Ideals of social service seem to be quite superficial. The advice of relatives and friends and some teachers seems to be very influential. Financial reasons are not overstrong, but they influence boys and girls. It is right that vocational choices should be changed; a second or a third decision should be reached, however, because of increased understanding on the part of the boy or girl rather than through whim or fancy. Further light may be gained upon the question by examining such data as are available, by comparing choices made in the junior high school with those made near the end of the senior high school, and by examining the replies students make when asked whether or not they have changed their minds with respect to their future work.

*Restatements of choice.* Such data as are available show an unexpectedly high degree of permanence of choice on the part of seventh-grade pupils. Two out of every three children entering the junior high schools of Baltimore indicated the same preference at the end of a year. The summer vacation had less influence upon vocational decision, as judged by tendency to change from one to another, than did the school work. Boys' choices were less permanent than girls', probably because more occupations are open to boys. No relation was manifest between the intelligence of the pupils and permanency of choice. About 1400 children furnished data for these conclusions.<sup>17</sup> Similar results were found in another study of children of this age, although the number of cases was small.<sup>18</sup>

These findings are in contradiction to those arrived at in a study of 488 pupils in a six-year high school. Here less than

<sup>17</sup> Franklin, E. E., *loc. cit.*, pp. 24-36.

<sup>18</sup> McCracken, T. C., and Lamb, H. E. *Occupational Information in the Elementary School* (1923).

a third of the pupils expressed the same vocational choice after the lapse of a year.<sup>19</sup>

The biographical sketches occurring in *Who's Who* of one thousand eminent women have recently been examined to see what changes they have made in vocation. A similar study was made of one thousand eminent men. Only about a tenth of the women had made any considerable change, and less than half of the changes which did take place occurred before the age of thirty-six. Changes in occupation among the men were somewhat higher, amounting to sixteen per cent of all. Individuals with the greatest amount of education manifested the least tendency to change. How far these results can be generalized is highly problematical.<sup>20</sup>

*Choices of junior-high-school pupils vs. choices of senior-high-school pupils.* An examination of Tables 18 and 19 (Chapter VIII) shows that preferred occupations are about the same for junior- and for senior-high-school pupils. Table 30, which compares the choices made by ninth- and

TABLE 30. VOCATIONAL CHOICES OF NINTH- AND TENTH-GRADE PUPILS COMPARED WITH CHOICES OF ELEVENTH- AND TWELFTH-GRADE PUPILS, BY PER CENTS <sup>21</sup>

	GRADES 9-10	GRADES 11-12
Agriculture.....	72.4	27.6
Professions.....	56.3	43.7
Business.....	59.1	40.9
Industrial.....	79.0	21.0
Nursing, etc.....	62.7	39.3
Fine arts.....	49.2	50.8
Undecided.....	69.3	30.7

Total number of cases, 8120.

Total number of high schools, 48.

Table read as follows: Of the total students who expected later to follow agriculture, 72.4 per cent were enrolled in grades 9-10 and 27.6 per cent in grades 11-12, etc.

<sup>19</sup> Willett, G. W. *Sch. and Soc.* (1919), 9: 334-38; 365-68.

<sup>20</sup> Kitson, H. D., and Kirtley, L. *Sch. and Soc.* (1924), 19: 110-12.

<sup>21</sup> Schmidt, H. W. *Ind. Arts Mag.* (1923), 12: 215-22.



tenth-grade pupils with those of eleventh- and twelfth-grade pupils, shows the same. There are, however, differences worthy of note. It appears that agriculture and the industries are more attractive to younger students. Probably many who intend to follow these occupations are eliminated before graduation; it is also probable that many forsake these for occupations of the white-collar type.

*Individuals' own statements of vocational decision.* Some three thousand high-school seniors answered the question, "How many months or years have you thought you would follow the vocation you have chosen?" When the replies were tabulated,<sup>22</sup> it was found that, in approximately half the cases, the decisions had been reached within two years. More than three fourths had decided within three years. In this respect the curve for girls was almost identical with that for boys. When considered in connection with the proposal that provisional choice of a vocation should be made during the junior-high-school period, the results suggest two things: it may be that the "natural" time for choosing a vocation comes a year or two later than the junior-high-school program calls for; it may be that, under proper guidance, a decision could be reached in many more cases at an early period. That these pupils regarded their decisions as more or less tentative is brought out by the fact that, in answer to direct question, more than half of those who planned to begin wage earning upon graduation did not expect to remain permanently in the lines of work which they designated as those which would immediately engage their efforts.

An investigation of 2083 college freshmen, located in eleven colleges and universities in as many widely scattered States, showed that about half had decided upon their vocation when they began high school while nearly all had reached a decision by the time they entered college. Ap-

<sup>22</sup> Data collected by the writer.

proximately half had, between the time they entered high school and the time they entered college, experienced a change of decision.<sup>23</sup>

The reliability of both these investigations is impaired by the way in which the studies were made. Some information may be gained by asking students to state from memory their decisions of two to five years before; much more reliable knowledge would be accumulated by asking for choices from year to year.

*Intelligence and change of plan.* Those boys and girls who remain in school and continue their preparation for a vocation equal or superior to one formerly designated seem to be of relatively high intelligence. Those who leave school and go to work and carry out their vocational intentions are similarly mentally superior, while those who engage in work inferior to previous plans are likely to be of relatively lower intelligence.<sup>24</sup> These findings are not necessarily in contradiction with those which showed intelligence to have small influence on change of vocational decision of junior-high-school pupils, for the question of remaining in school is not so pressing for junior-high-school boys and girls. An individual receiving a low rank upon an intelligence examination may be as steadfast in his resolution as one receiving a high score; necessity, rather than desire, may force a modification of plans.

**Occupational destination of pupils leaving before the end of the secondary school.** Judgment of the occupational destination of pupils leaving school before the end of the secondary-school period may be inferred from tables showing the destinations of graduates. If graduates have more than their proportion in the higher occupations, the conclusion is justified that it is at the expense of those leaving

<sup>23</sup> Crathorne, A. R. *Educ. Ad. and Super.* (1920), 6:274-84.

<sup>24</sup> Proctor, W. M., and Ward, H. *Jour. of Educ. Res.* (1923), 71:277-88.

before completing school. There is undoubtedly a relationship between educational attainment and occupation. Pupils receiving a ninth-grade education or less are ultimately found in the more lowly industrial, commercial, agricultural, or household occupations; those who receive a tenth- or an eleventh-grade education probably enter the same fields, where they fill positions of somewhat higher level than the ninth-grade group.

Occupations entered by pupils who leave school as soon as the compulsory law permits are known from statistics kept in connection with continuation schools and applications for working certificates. As would be expected, the occupations are simple in nature. These children enter the factories and mills or mercantile establishments, the girls going in large numbers to department stores and offices and many boys entering the messenger service and offices. In nearly all cases there is little chance for advancement. Wages are small, the work becomes monotonous, and frequent changes are made. Unless measures are taken for guidance, the vast majority of these boys and girls remain in the unskilled industries.<sup>25</sup>

The commercial positions held by boys and girls fourteen to seventeen years of age, inclusive, are shown in Table 31. These findings were arrived at through an extensive survey involving a number of large cities. It will be noticed that fourteen-year-olds fill for the most part positions in the messenger and delivery service, general clerking, and retail selling. Some distinction is apparent between the positions filled by boys and by girls. Children under sixteen are not employed in certain positions. For example, the typists, stenographers, and bookkeepers among the young people engaged in commercial occupations are girls sixteen or seven-

<sup>25</sup> For a summary of a number of such studies, see *Bur. of Educ. Bull.* (1918), no. 24, pp. 38-59.

TABLE 31. DISTRIBUTION BY AGE AND SEX OF YOUNG WORKERS IN COMMERCIAL OCCUPATIONS <sup>26</sup>

POSITIONS HELD BY BOYS AND GIRLS FROM 14 TO 17 YEARS OF AGE, INCLUSIVE	BOYS				GIRLS				TOTALS
	14	15	16	17	14	15	16	17	
Messenger.....	110	229	228	124	16	32	69	45	853
General clerk.....	21	56	74	85	8	34	50	77	405
Cashier.....	0	1	0	7	3	14	18	17	70
Shipping clerk.....	4	7	18	13	0	0	0	13	55
Stock clerk.....	2	37	42	47	3	16	10	21	178
Switchboard operator.....	0	1	2	2	0	11	67	110	193
File clerk.....	2	18	39	35	4	18	40	57	203
Mail clerk.....	4	18	30	29	2	8	13	15	119
Bundle wrapper.....	7	15	7	14	3	31	55	51	193
Delivery wagon driver.....	14	26	36	22	0	0	0	0	98
Typist.....	0	1	0	3	0	4	15	33	56
Stenographer.....	0	1	1	6	0	8	24	48	88
Bookkeeper.....	0	1	1	9	0	0	8	19	38
Billing clerk.....	0	0	4	7	0	3	8	7	29
Salesman (retail).....	14	25	51	49	14	28	61	93	335
Calculating machine operator.....	1	4	2	2	1	1	3	13	27
Duplicating machine operator.....	1	3	4	5	0	0	4	5	22
Misc. machine operator.....	0	0	0	2	0	3	5	10	20
Miscellaneous.....	39	48	59	67	13	29	32	36	329
Total.....	219	491	608	528	73	240	482	670	3311

teen years of age. The positions of general clerk, messenger, stock clerk, file clerk, general salesman, and billing clerk were regarded as offering special opportunities for advancement.

*Placement and follow-up.* One of the most important parts of the guidance program is placement; another is follow-up work. Without advice and direction, young workers take the first job that offers. They learn of vacant positions through advertisements, from relatives or friends, and give little heed to the type of employment, their own fitness for it, or chances for advancement. Indeed, the capabilities of fifteen- or sixteen-year-old boys and girls narrow the positions which they can fill. If they are to be prohibited from remaining in blind-alley jobs, and if they are to be saved from a life of unskilled labor, it is essential that

<sup>26</sup> *Survey of Junior Commercial Occupations.* Federal Board for Vocational Education, Bull. no. 54, Commercial Education Series no. 4, 1920. Adapted from Table given in this bulletin on p. 30.

placement of pupils entering industry be supervised. Bureaus have been organized to undertake this work. Here are kept lists of pupils desiring positions and lists of available places. The director of placement is an employment manager who has the welfare of the applicants in mind, knows something of their limitations and capabilities, and uses all available means to get them into the places where they belong.

Young workers so frequently change jobs that they must be followed if proper influence is to be exerted. They must also acquire industrial knowledge and skill, for no one, least of all a fifteen- or sixteen-year-old child, can advance unless he is willing to become a student of his job. Follow-up should, therefore, become a period of supervised apprenticeship, the outcome of which should be capable and efficient workers.

**Vocational destinations of high-school graduates.** For purposes of determining the vocational destinations of high-school graduates it will be convenient to separate the group into two divisions: those who enter industry immediately, and those who continue their education. The former group numbers about 55 per cent of the total number of graduates; the latter, 45 per cent.

The work entered upon by graduates of middle-western high schools who begin wage-earning immediately is shown in Figure 12 and Table 32. In line of occupation and in proportions entering occupation these data are perhaps fairly typical. The designations are not markedly different from those entered by pupils not finishing school; but the general level of the positions is doubtless higher. More than a fourth, it will be noticed, engaged in teaching. This is made possible by certification laws which have been in operation in many Mid-Western and Western States, which permit graduates who take the high-school teacher training course

to teach in the rural schools. There is a growing tendency to require for teaching preparation in advance of high-school graduation, so that this occupation will gradually be closed.

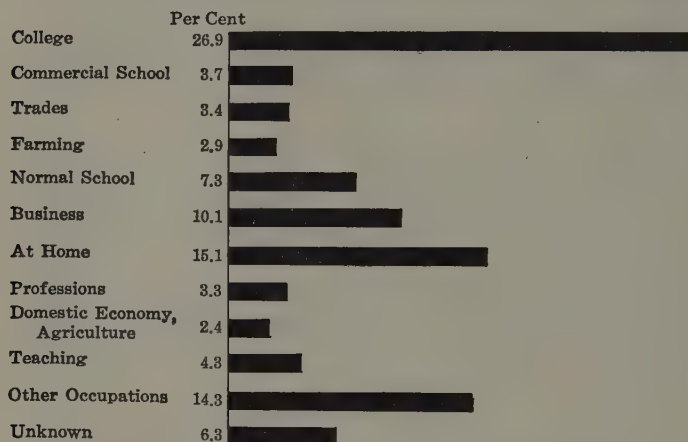


FIGURE 12. DISTRIBUTION OF 20,389 GRADUATES FROM 596 MIDDLE-WESTERN HIGH SCHOOLS

(Counts, G. S. *Bur. of Educ. Bull.*, 1915, no. 6, p. 91.)

TABLE 32. DISTRIBUTION OF 2365 HIGH-SCHOOL GRADUATES IN FIVE NORTH-CENTRAL STATES, BY PER CENTS <sup>27</sup>

	EMPLOYMENT DISTRIBUTION			TRAINING DISTRIBUTION	
	Boys	Girls		Boys	Girls
Teaching.....	4.2	27.3	Normal school.....	1.6	18.9
Married.....	0.0	8.3	Arts colleges.....	21.2	15.6
At home.....	0.7	4.7	University.....	11.9	8.5
Nursing.....	0.0	1.8	Minor colleges.....	9.3	7.1
Stenography.....	1.8	3.2	Business college.....	3.7	1.6
Bookkeeping.....	2.2	1.0	Technical school.....	3.3	0.6
Clerking.....	14.5	5.3	Agricultural school.....	6.3	0.0
Business.....	2.7	0.0	Domestic science.....	0.0	3.8
Farming.....	5.6	0.0	Medicine.....	1.4	0.0
Labor.....	3.6	0.0	Law.....	3.3	0.1
Trade.....	5.4	0.0	Engineering.....	4.5	0.0
Professional assistant....	1.6	0.0	Dentistry.....	1.8	0.0
			Pharmacy.....	1.1	0.0

<sup>27</sup> Pittenger, B. F. *Sch. and Soc.* (1916), 3:901-07.



Approximately a sixth of the total number of graduates, and a third of those continuing their education, enter normal schools, private business schools, art schools, etc. Individuals of this group seek to gain in as short a time as possible training which may be put to economic use. Environment and sex, as well as the economic factor, play a considerable rôle in making this division. There is always a tendency to attend the most convenient institution, and girls go in large numbers to normal schools. On the other hand, more boys than girls enter colleges and universities. Communities and States vary with respect to the proportions of graduates who enter different types of institutions.

Students entering colleges and universities are again divided into two approximately equal groups: those who will complete the course, and those who will drop out prior to that time. Graduates of colleges and universities enter the professions, managerial and higher business and industrial positions; those leaving earlier perhaps enter the semi-professions and business and industrial positions of a somewhat lower rank than those attained by the graduates.

Tables such as the above are helpful in understanding the type of work in which high-school graduates will engage, but they are limited in two respects: they do not follow individuals long enough to show where they eventually land, and the vocational classifications are too general. In an attempt to overcome these limitations, Thorndike and Symonds<sup>28</sup> have gathered data from six high schools where for a long period of years records have been kept of the occupations of their graduates. These writers conclude that high-school graduates of 1892 to 1901 are engaged in the highest quarter of the country's work, as rated on the basis of desirability and importance. If the occupations of the male graduates were arranged along a scale of seven units, in which one

<sup>28</sup> Thorndike, E. L., and Symonds, P. M. *Sch. Rev.* (1922), 30:443-51.

represents an unskilled laborer, four a skilled tradesman, and seven a professional man, it would be found that more than half are located in the two highest compartments, and more than four fifths in the three highest. If the occupations of the women were similarly distributed, three fifths would be placed in the two highest divisions, and nearly nine tenths in the highest three. This group of high-school graduates had ten times their quota in the professions. In considering these statements, it should be remembered that the high school attracted in the nineties a larger proportion of students who were destined to enter the professions and higher callings than it does now.

Topics for discussion and investigation and bibliography at the end of the following chapter.

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## CHAPTER XI

### EDUCATIONAL AND VOCATIONAL GUIDANCE

(continued)

#### TESTS AS AN AID IN GUIDANCE

**Intelligence and quality of scholarship.** If that phase of general intelligence which has been designated as abstract is the one best measured by intelligence tests, and if it is the one most concerned in ordinary school work, we should expect high scores on the test to go along with excellence in scholarship. In general, this is the case, although there are contradictions among the findings of the investigations of this question, and there are many individual exceptions. The whole problem may be considered from the following points of view: the general correspondence between intelligence level and scholarship; the minimum intelligence rating consonant with successful school work; and the relationship between intelligence level and success in each of the several subjects.

*Correspondence between intelligence level and scholarship.* Positive correlations are invariably found between scholarship and intelligence scores, but different investigators disagree as to the strength of the relationship. Some of the correlations are so low as to be almost negligible; others are so high as to lead the investigator to assert that intelligence is the most important single factor influencing scholarship. The most frequently found correlations are between .40 and .50, which means that a significant relationship exists,<sup>1</sup> but

<sup>1</sup> Book, W. F. *Intelligence of High School Seniors* (1922), chap. 6. Colvin, S. S., and MacPhail, A. H. *Bur. of Educ. Bull.* (1924), no. 9, p. 21.

it also means that the guarantee of high intelligence resulting in superior scholarship in the case of an individual student is not over-strong, and that pupils making relatively low scores may achieve high marks. In other words, the relationship holds when groups of pupils are compared; it may not hold when individuals are compared. The grounds for prediction are thus unsafe. The conclusion is inescapable that factors other than intelligence condition the quality of scholarship.

The relationship between scholarship and intelligence would be higher if bright pupils always worked up to their capacities. As a group, they are not so likely to exert themselves as the less bright pupils, probably because they can get along without exertion. "Achievement quotients," which show the ratio between what pupils are capable of doing and what they actually do, are generally lower for boys and girls ranking high on intelligence tests. Moreover, it seems that in the lower high-school classes lack of ability is a more important cause of failure than it is in the upper classes.<sup>2</sup> A table summarizing the correlations thus far computed between intelligence scores and marks would probably show that the relationship grows less with each succeeding year. If this is the case, it is perhaps because factors other than intelligence which condition scholarship affect older pupils more than younger pupils. When conditions are so arranged that abler pupils are held to better accomplishment, the result is an increase in achievement quotients.

*Minimum intelligence necessary for successful school work.* Intelligence scores prove much more reliable when studied to determine the minimum intelligence necessary successfully to carry the work of the secondary school. When scores are arranged in ascending order with the pupils' names alongside, and when the marks received by the pupils are com-

<sup>2</sup> Feingold, G. A. *Educ. Ad. and Super.* (1923), 9:24-38.

pared with the scores, it is usually found that the large majority of pupils below a certain point on the intelligence scale receive very low or failing marks.<sup>3</sup> It has been found, for example, that fourteen-year-old pupils scoring below 65 on Army Alpha usually do not enter high school. A fourteen-year-old pupil entering high school should have a score of 85 if he is to achieve graduation, and a score of 105 to secure minimum profit from algebra.<sup>4</sup>

This point seems to have been well established in the case of college students. At Columbia College it was found that almost all of those men scoring below 65 on the Thorndike examination failed and were dismissed from college within two years. Men scoring somewhere between 65 and 75 did such poor work as to be designated as "bad college risks," and it was recommended that they be admitted only if they present evidence of extraordinary character and industry, or if there are no better candidates who might be admitted.<sup>5</sup> A similar situation was found in other colleges.

*Relation between intelligence level and success in various subjects.* Theoretically, it should be possible to carry a step further the process of establishing the relationship between level of intelligence and success in school work to determine the amount of intelligence necessary for success in each of the school subjects. Results of attempts in this direction indicate that the academic studies demand higher ratings than do the vocational studies. (See Table 33.)

<sup>3</sup> The numerical point, of course, depends upon the scale used. The reader should distinguish sharply between mental age, intelligence quotient, and score. A pupil's score indicates the total number of points or reactions he makes in a test. Mathematical treatment is necessary to reduce the score to mental age.

<sup>4</sup> Cobb, M. V. *Jour. Educ. Psych.* (1922), 13:449-64; 546-55. See also Bright, I. J. *Jour. Educ. Res.* (1921), 4:44-55; Wood, O. A. *Sch. Rev.* (1920), 28:41-49; Madsen, I. N. *Jour. Educ. Res.* (1921), 3:43-52.

<sup>5</sup> Wood, B. D. *Measurement in Higher Education* (1923), p. 68. Mac-Phail, A. H. *Intelligence of College Students* (1924), pp. 35-50.

TABLE 33. MEDIAN INTELLIGENCE QUOTIENTS NECESSARY FOR SUCCESS IN THE SEVERAL SUBJECTS <sup>6</sup>

	Boys		Girls	
	Failed	Passed	Failed	Passed
Latin I and II.....	118	135	116	132
Ancient history.....	105	132	99	127
English.....	105	129	93	118
Algebra.....	111	123	99	124
Manual training.....	...	112	..	..
Mechanical drawing.....	108	110	..	..
Typewriting.....	76	109	87	96
Woodworking.....	70	93	..	..
Telegraphy.....	76	81	..	..
Household arts.....	..	..	94	107
Rapid calculation.....	..	..	66	94
Sewing.....	..	..	76	94
Cooking.....	..	..	..	83

High-school freshmen in Omaha, Nebraska. The intelligence quotients are computed from scores made on the Army Alpha scale, and are not strictly comparable to intelligence quotients achieved upon the Stanford Binet.

However, practical difficulties are soon encountered in attempting to decide upon the intelligence level demanded by a specific subject. In the first place, it is likely that the academic studies attract the brighter boys and girls, and that the standards are therefore higher for these subjects. Second, it is by no means certain that standards of excellence are the same from teacher to teacher or from school to school. On the contrary, we have good reason to believe that what is called passing or even good work by one teacher or in one school is judged failure by another teacher or in another school. Third, a policy has sprung up which places the teacher with a high percentage of failures in an unfavorable position. In order to reduce the number of failures and thus escape censure, many teachers have lowered their requirements. Finally, industrial and commercial courses, when

<sup>6</sup> Madsen, I. N. *Sch. Rev.* (1922), 30: 692-701.



first established, were the dumping grounds for students unable or unwilling to carry the academic subjects. Standards of accomplishment were lower. As time went on these standards were raised little by little, although it is probable that they do not yet demand as high a type of work as do the academic subjects.

It is doubtful if this question will ever be settled so long as pupils' excellence in school work is judged by the usual methods. If the whole movement of educational measurements has taught us anything, it is that subjective estimates of pupils' work are untrustworthy. Marks are notoriously unreliable. We need first of all to set up the minimum essentials for each of the school subjects, and then to measure mastery of these essentials through objective tests and scales. Then we shall be able to determine the intelligence level necessary for success. As yet we have made little progress in the first aspect of this task. Moreover, tests and scales for measuring accomplishment in studies usually regarded as belonging to the secondary school are still admittedly incomplete.

**Intelligence ratings and choice of subjects.** Two statewide surveys of high-school seniors give strikingly similar results with respect to the relation between subjects and intelligence scores of pupils pursuing them. Pupils enrolled in the academic, classical, college-preparatory, and scientific curricula clearly lead those found in the general, vocational, and normal-preparatory groups. The commercial group ranks lowest.<sup>7</sup> A similar situation is found when students from classical, general, and vocational high schools are compared, or when the intelligence scores of college students are tabulated by the divisions in which they are enrolled.<sup>8</sup>

<sup>7</sup> Book, W. F., *loc. cit.*, pp. 145-47, 161. Colvin, S. S., and MacPhail, A. H., *loc. cit.*, p. 22.

<sup>8</sup> Madsen, I. N. *Sch. Rev.* (1922), 30:692-701. Gates, A. I. *Psychology for Students of Education* (1923), p. 445.

When seniors who select the various studies are compared in terms of psychological scores, it is found that those who elect languages and science lead the other groups. The vocational group ranks lowest. It is interesting to note, particularly in the case of the vocational subjects, that the seniors who liked them least are psychologically superior to those liking them best.

While a considerable amount of overlapping is found, it appears that high-school students themselves are forming their own groups in accordance with ability.

**Educational guidance based upon intelligence.** It seems unmistakable, as the schools are now organized, that a child's intelligence limits his educational accomplishment both with respect to the length of time he will remain in school and with respect to the type of work he should pursue. Intelligence tests should have, therefore, a prominent place in educational guidance. Holding in mind the limitations of the tests, pupils can be advised with respect to the school work which is most nearly commensurate with their abilities. Especially can they be advised against undertaking work for which they have little or no talent.

One of the most thoroughgoing investigations in educational guidance based upon intelligence tests is that of Proctor. His method consisted in giving to students in the last half of the eighth grade intelligence tests, dividing them into two groups of equal ability on this basis. One group was carefully advised individually as to the work that should be undertaken in high school, while the other groups made their own selections in the usual manner. It was found that 31 per cent of the unguided group failed in one subject and 11 per cent failed in two subjects during the first high-school year, while only 18 per cent of the guided group failed in one subject and none failed in two subjects. Moreover, all those students with I.Q.'s of 120 or over passed their algebra,

while 40 per cent of those with I.Q.'s below 100 either failed or were conditioned in college recommendation grades. Of those testing below 95 I.Q., 70 per cent failed in more than half their studies, showing that at least average intelligence is necessary for successful high-school work.<sup>9</sup>

**Vocational guidance based upon intelligence.** General intelligence tests can be used in vocational guidance, although the extent of their application is not yet clear. The method is to find, through investigation of large numbers of individuals engaged in the various occupations, the level of general intelligence needed for success therein. Given this, and knowing the general intelligence of the individual, the vocational counselor can advise an occupation commensurate with ability. Perhaps the greatest use of the method will be a negative one; that is, the pupil will be advised against undertaking training for an occupation success for which demands a higher level of intelligence than he possesses.

Tentative norms are at hand for determining the level of intelligence found in many occupations. Table 34, showing the medians of intelligence for the occupational levels, is the result of army tests applied to 36,500 men.

TABLE 34. TYPICAL SCORES FOR OCCUPATIONAL GROUPS IN THE ARMY (INTELLIGENCE TEST ALPHA)

APPROXIMATE INTELLIGENCE LEVELS, MAJOR OCCUPATIONAL DIVISIONS	MEDIAN SCORE	MIDDLE 50 PER CENT
Unskilled labor . . . . .	35	21-63
Semi-skilled labor . . . . .	42	23-70
Skilled labor . . . . .	61	26-95
Business and clerical . . . . .	96	58-145
Professional . . . . .	140	98-184

<sup>9</sup> Proctor, W. M. *Psychological Tests and Guidance of High-School Pupils*. *Jour. of Educ. Res. Monographs* (1921), no. 1. Summarized in *Jour. of Educ. Res.* (1920); 1: 258-70; 369-81; *Sch. and Soc.* (1918), 8: 473-78; 502-09.

Perhaps a word of caution against taking Table 34 and similar tables too literally is needed. In the first place, it will be seen that there is a great range of ability in each occupational group. Overlapping among the groups is pronounced. Second, it is not certain that the scores give a true representation of actual conditions. Exemptions from the draft were given to many who were during war-time engaged in essential occupations. This perhaps caused the median score for one of the groups to be lower than it should be. Third, many qualities other than intelligence condition success in an occupation. Possession to a large degree of certain qualities such as industry, honesty, reliability, punctuality, morale, personality, physical strength, skill in muscular coördination, might compensate for a relatively low intelligence. Finally, a given level of intelligence may be, and probably is, typical of successful persons in a score of particular vocations.

**Diagnosis of ability through special tests.** Mathematical ability is often regarded as a special endowment which is inherited. If such is the case it should be possible through specially devised tests to uncover this ability as well as pronounced lack of ability. Diagnosis of ability and predictions as to an individual's subsequent success in mathematics could be made with more confidence than is now the case. On this theory considerable experimentation has been carried on. A number of tests of special ability are now available, including those for mathematics, foreign languages, stenography and typewriting, music, and mechanical aptitude. To date these tests seem to show higher predictive value than do intelligence scales, although for the most part they cannot be regarded as infallible. Pupils who later will be successful may be selected better by some of these tests than by any other single agency; it is almost certain, however, that through their use some pupils would be ex-

cluded from study in a field where they would achieve at least reasonable success, and that some destined to disappointment would be admitted. Some tests have higher predictive value than others; many, however, can profitably be used in connection with other criteria and standards of selection.

*Musical ability.* One of the best-known tests of special ability is the Seashore music test. It is constructed on the theory that to be successful in the study of music one must possess at the outset a keen sense of rhythm, must be able to make fine distinctions in pitch, have a good memory for tones, be able to judge correctly which of two chords is more pleasing, and to detect discords. It is not held that possession of these five abilities guarantees success in music; plainly, other traits are also involved. It is held, however, that lack of capacity in one of these lines makes notable accomplishment practically impossible.<sup>10</sup>

*Mechanical aptitude.* Two well-known tests — the Stenquist Mechanical Aptitude Tests and the Thurstone Vocational Guidance Tests — have been invented to test inherent mechanical aptitudes. The Stenquist tests have, through several years' experience, proved of great assistance in uncovering ability to succeed in mechanical lines. They correlate highly with teachers' estimates of ability. The Thurstone tests are designed to test high-school seniors and college freshmen to determine their probable success in an engineering college. Elaborate statistical study has indicated that these tests predict probable success of a student in engineering more accurately than does high-school scholarship. A value of considerable importance claimed for both the Stenquist and the Thurstone tests is that in an hour or two a teacher can discover what would otherwise take a term's experience. It should be pointed out, how-

<sup>10</sup> Seashore, C. E. *The Psychology of Musical Talent* (1919).

ever, that no claim is made that the abilities of all pupils will be diagnosed without error by either of these tests.<sup>11</sup>

**Standardized educational tests as a means of predicting academic success.** As might be expected, the method here consists of administering various forms of educational tests, and of determining how far success in later academic work corresponds with performance in the tests. Experiments in this field are not numerous, and there will be given here only an account of one of the most important studies to indicate the method and to show its possibilities. Fretwell gave a series of tests to boys in the Speyer School in New York City. Using school marks as a criterion for comparison, he found that success was more accurately predicted by the standardized tests than by all the pupils' previous marks combined.<sup>12</sup>

It is, of course, true that mental and educational tests have much in common, and it is likewise true that tests designed to diagnose specific abilities have much in common with both. For example, arithmetic tests involving reasoning form an important part of many group tests of intelligence. Arithmetical educational tests not only involve intelligence, but they likewise show the success that has attended the application of this intelligence to the field of arithmetic, and the amount of knowledge, skill, and power the individual possesses and which he may utilize later. They should thus have predictive value for later work, particularly that which contains the same subject-matter and uses the same mental processes. Similar statements can be made for other educational tests.

**Limitation of mental tests in educational and vocational guidance.** Since mental tests are used so extensively in educational and vocational guidance and in classifying

<sup>11</sup> Stenquist, J. L. *Measurement of Mechanical Ability* (1923); Thurstone, L. L. *Jour. Educ. Psych.* (1919), 10: 129-43; *Educ. Rev.* (1922), 63: 11-22.

<sup>12</sup> Fretwell, E. K. *A Study in Educational Prognosis* (1919).



pupils into homogeneous groups for instruction, and since there is a real danger that greater reliance will be placed upon the results of the tests than is warranted, their shortcomings should be summarized briefly. We will consider, first, the reliability of mental tests; second, the factors which condition their validity; and third, those traits which mental tests do not measure.

*Their reliability.* Aside from correlating mental tests with the results of school work and with success in other activities, the reliability of mental tests can be shown by retesting the same subjects at intervals ranging from a few days to a period of years. If the pupil is tested at the age of twelve, for example, and is found to possess an intelligence quotient of 110, retests at the age of thirteen and fifteen should yield results that are at least approximately the same. If the second test shows an intelligence quotient of 100, and the third of 120, it is clear that little can be gained by way of diagnosis or prognosis of the pupil's ability to do school work. Consistency of results in retests is one of the severest proofs of the method.

Retests made upon about 1500 children, at intervals ranging from a few days to more than five years, showed average differences in intelligence quotient of between 4 and 5 points. In from 10 to 15 per cent of the cases the retest yielded a difference of 10 or more points. A second test given in doubtful cases increased the degree of reliability by about 40 per cent. Individual tests were used in all cases. The conclusion was drawn that single examinations are very reliable, if made by experienced and well-trained examiners who are careful of their methods.<sup>13</sup> However, if 110 I.Q. marks the dividing line between the normal and the superior, the difficulty of assigning a pupil who tests at this point to the group where he belongs will be apparent.

<sup>13</sup> Rugg, H., and Colloton, C. *Jour. of Educ. Psych.* (1921), 12: 315-22.

The impossibility of giving individual intelligence tests to the hundreds of thousands of men in the army led to the development of the group tests. Similarly, the time and expense connected with individual testing has stimulated the use of group tests in the schools, though it is commonly conceded that individual tests given by experts would be more accurate and productive of far more satisfactory results in educational and vocational diagnosis and guidance, if it were possible to employ them.

*Factors conditioning their validity.* Several dozen group tests for measuring the intelligence of secondary-school students have been put upon the market since the War, some of which are very reliable, others only moderately so, and others admittedly inferior. A scale cannot be reliable unless it tests the thing it purports to test. Again, tests must be carefully standardized. This involves, among other things, trying them out on unselected groups of children. This is one of the most difficult tasks confronting the test-maker, for it may be next to impossible for him to assure himself that the children are representative of the various social and economic strata, that their performance is uninfluenced by practice, and that all the children of a community are included.

That common experiences must be utilized in intelligence testing has been clearly recognized by all makers of successful tests. It is obvious that the responses to a series of questions by a child brought up as a member of a barbaric tribe would be greatly different from those of a child equally as bright but reared in civilized society. In the same manner, although not to such a marked degree, would the responses of two children vary had they lived in widely different environments existing within the same nation. Binet recognized this principle, and attempted to incorporate in his tests those elements which are certain to be

found in the average environment. For example, the normal child of nine should have learned to make simple change, he should be able to use simple words in sentences, give three rhymes each to such words as day, mill, spring, and to discriminate weights. A child of five should be able to distinguish red, yellow, blue, and green, to define such words as chair, horse, pencil, in terms of use or better, and to discriminate differences in weights of a simpler nature than the above nine-year-old test.

Shortly after the close of the War the Army Alpha tests were given to students in a large number of collegiate institutions. The results uniformly showed that the men ranked higher than the women. Instead of attributing this to a difference in intelligence, it is probably more nearly correct to say that the men made higher scores because many of the points in the test included those things which appeal more to the interests of men than of women. In the Stanford Revision of the Binet tests girls were superior to boys in tying a bow knot, while boys showed a tendency to surpass the girls in mechanical tests. It is possible that this is also attributable in part to differences in interest.

It is a matter of common knowledge that the teacher of a class or grade of pupils who come from homes in which good English is spoken has a simple task, in grammar or language instruction, in comparison with the teacher of pupils from homes inferior in this respect. Not only will the children of the first group speak more correctly, but they will show more verbal ingenuity and have perhaps larger vocabularies. To ignore this factor in giving tests of general intelligence is manifestly unjust. Many tests depend to a great degree upon the ability to understand and use English, and unfair comparisons have been made as a result. Some originators of tests have eliminated as much as possible the use of English.<sup>14</sup>

<sup>14</sup> See Colvin, S. S., and Allen, R. D. *Jour. of Educ. Psych.* (1923), 14:1-20.

Specific instructions for giving and scoring accompany practically every test. Nevertheless, all psychologists agree in the assertion that definite training should be taken by any one who administers them. Moreover, the tester should have an adequate knowledge of the theory of tests, for while he may follow directions religiously and thus get results that are the same or nearly the same as those reached by an expert, he will frequently err in the interpretation of his results. In individual testing this is particularly true, but the statement may also be made with respect to group tests.

*Traits not measured.* It should be understood, first of all, that tests measure acquired intelligence, from which is inferred the amount of general intelligence the individual possesses. Differences in native capacity are likewise inferred from differences shown in amount of acquired intelligence.

Mental tests do not show the direction in which intelligence may be applied. This is determined more by interest, due in no small measure to environmental influences and to likes and dislikes springing from emotional characteristics. The son of studious parents, who have had a college education and who are interested in occupations of an academic and professional type, might direct his efforts along the same lines rather than toward agricultural or mechanical interests, with which he has had little contact. Again, he might have little patience with work demanding routine and exactness, and hence be led to apply his talents in a field allowing more freedom. However, such wide opportunities for acquaintance with the diverse fields of human activity prevail that it frequently happens that the boy or girl may become interested in an occupation far removed from those most outstanding in his immediate surroundings.

Tests do not always bring to light severe emotional disturbances. Special methods of procedure are employed to uncover these deviations from the normal, which without

question exert marked influence upon school work and upon the general life of the individual.

Tests of general intelligence do not indicate the efficiency of the working habits, nor the industry and application with which an individual devotes himself to the task at hand. While it frequently happens that brighter pupils have through the method of trial and accidental success hit upon some of the recognized principles of study, and while good students often show keener interest in improving their study habits than do poor students, it is dangerous to assume that good students have developed proper study or working habits. Many pupils of superior native endowment are prone to develop very poor working habits, since they are able to keep up with the class with a small amount of attention to their books and by following the work of the class period. They thus become superficial and indisposed to consecutive effort.

Since intelligence tests are designed to measure only general intelligence, they cannot be used to uncover special talents, such as ability in music, drawing, or mechanical lines. They may hint that a pupil possesses special ability; or they may allow such ability to pass unnoticed. Methods of observation and special tests, in so far as they are available, must be used.

Other important factors influencing school work which must be judged by some other means or instrument than mental tests, are the amount of encouragement received at home, health, regularity of attendance, attitude toward teachers, and interest in school work.

#### ADAPTING INSTRUCTION TO INDIVIDUAL DIFFERENCES

**School work for pupils of varying abilities.** Economy of time was one of the strongest forces operative in producing the present reorganization of secondary education. This

factor exerted considerable influence in planning the work of the first junior high schools, where credit towards high-school graduation was sometimes given for work pursued in the seventh and eighth grades and where other means were taken to insure rapid progress, especially for bright pupils. Of late years the question of economy of time has been receiving less attention, and while it has not been entirely abandoned, a feeling exists that pupils should not be hurried through the schools. It has become a question of adapting the program of studies to the varying abilities of pupils.

*Bright pupils.* An enriched program, which provides more intensive and extensive treatment of topics as well as additional subject-matter, seems best suited to abler pupils. Since they learn readily and since it has been shown that the rapid learner is likely to have corresponding ability in memory, there may be a reduction of time spent upon drill and illustration. Teaching should not place undue stress upon details but allow development of initiative and free expression and make provision for learning by principles.<sup>15</sup>

The practice of allowing certain pupils to carry more than the normal number of subjects has always had wide occurrence. Experience indicates that bright and industrious pupils can carry one and perhaps two extra subjects with no material reduction of marks; dull or lazy pupils, on the other hand, improve the quality of their work but little with light programs.<sup>16</sup> This system is particularly applicable to small schools, where the number of pupils will not permit grouping according to ability. It is also applicable to senior high schools, where segregation in ability groups and in different curricula is for the most part out of the question.

*Dull pupils.* In dealing with dull pupils, one of the first

<sup>15</sup> Henry, T. S. Classroom Problems in the Education of Gifted Children. *Nineteenth Yearbook* (1920), part 2, pp. 109-19.

<sup>16</sup> Briggs, T. H. *The Junior High School* (1920), p. 143.



problems will be to change their attitude toward school work. Most of them will have failed one or more times, and their point of view towards school is often one of dissatisfaction and rebellion. Many of them are merely waiting for the day when they will no longer be compelled to attend. They are unable to see the value of their work, and they have gotten to the place where they expect to fail. In establishing confidence, which is the first concern in dealing with these children, it is necessary to provide them with work they can successfully do.

The natural inclination is to give those boys and girls who learn more slowly the same program of studies, and to permit them to progress more slowly than the normal or superior groups. This method has its obvious faults, and for it was substituted the plan of including only minimum essentials of the courses studied by the regular classes. Dull pupils have always been provided with more practical or industrial arts, when it was possible to make such a provision.

The principle of selecting minimum essentials for over-age pupils is undoubtedly sound; the mistake lies in attempting to teach them by ordinary methods. Abstract principles are out of place, and drill by verbal methods ineffective. Subject-matter is best presented concretely, with much dependence placed upon learning by doing. A different type of textual material is needed. Texts should be suited to their greater physical and social maturity, while at the same time they contain the minimum essentials in concrete, simple form.<sup>17</sup>

*Special classes for very bright pupils.* Recent educational literature contains numerous accounts of experiments wherein very bright pupils are segregated in special classes and given special instruction. For the most part, these

<sup>17</sup> Cf. Dickson, V. E. *Mental Tests and the Classroom Teacher* (1923), pp. 109-46.

accounts deal with children below the junior-high-school age. In a school system that has several fifth grades, for instance, teachers are asked to select ten to twenty-five per cent of the pupils in their classes who are doing the best work. The school psychologist then tests these pupils, they are given a physical examination, and other factors which will probably affect their working ability are taken into account. A class is then formed which is composed of the very brightest pupils. It has been found that they can easily do as much as two years' work in one. At present, classes of this type are not often found in the secondary school, but the indications are that experimentation in this direction will soon begin.

**Homogeneous grouping of pupils.** For many years superintendents have been aware that the graded system, while economical from the standpoint of expense and advantageous because of the social training it offers, is at fault because it can make little provision for the variance of ability among pupils to do the work of a given grade. The well-known plan of W. T. Harris, which was outlined in his reports to the St. Louis Board of Education during the years of 1868-73, was one of the first efforts to meet this problem. He divided the course of study for each year into quarters, and allowed promotion at the end of each quarter. A new class, formed at the end of each quarter, was composed of pupils who had completed the work and were able to proceed. Classes were likewise formed of the slower pupils who were unable to carry the work as rapidly. The Cambridge "double-track" plan, the Denver plan, the Portland (Oregon) plan, were among the most noted schemes of grading to meet this problem.

With the advance recently made in the psychology of individual differences, and with recently developed methods of testing, the problem of selecting pupils of equal or nearly

equal ability is greatly facilitated. Numerous school systems have adopted the policy of organizing their classes into sections upon the basis of ability, particularly in the junior high school. There the total body of pupils is larger than in the senior high school, because fewer have dropped out. In the senior high school the possibility of ability grouping is further reduced by differentiated curricula. Only in the largest school systems is the number of pupils sufficiently great to permit a separation into vocational, home economics, commercial, and college preparatory divisions, and a second separation within these divisions in accordance with ability.

*Methods of classification.* Experience indicates that all data of aid in understanding the individual pupil should be taken into account in placing him in a group. Teachers' estimates of scholarship, industry, etc., marks earned in preceding grades, especially as they show relative standing, performance upon educational tests, and level of intelligence should be used. The first grouping should be tentative, for it is impossible to place all pupils in groups where they belong. Especially during the first month will considerable readjustment be necessary.

*Intelligence tests an aid in classification.* Group tests of mental ability are of course one of the greatest helps in arranging homogeneous sections, but they are not sufficiently accurate to classify pupils definitely, even though factors other than intelligence had nothing to do with scholarship. If, for example, two or more tests are given to the same pupils, and if the pupils are arranged in three groups in accordance with their scores on each of the tests, it will be found that a large number of the pupils are displaced — that is, many of the pupils if classified in one of three sections on the basis of the scores received in one test, will be placed in a different section if assigned according to ability

as measured by a second test. It is obvious, therefore, that mental tests should be used only as one criterion of classification.<sup>18</sup>

*Does homogeneous grouping meet the problem of individualizing instruction?* We have often been warned that separation of pupils into groups on the basis of ability may result in feelings of superiority on the part of bright pupils and feelings of inferiority on the part of mediocre or dull pupils. In attempting further to foresee the results of such segregation, it has also been conjectured that the less gifted will lose through the absence of the contributions of the abler pupils to the class discussion. The value of special classes for bright pupils, at least as far as school accomplishment is concerned, has often been conceded.

We have little more than general observation to guide us in deciding what the social results of ability grouping will be, and only tentative conclusions can be made from available experimental evidence concerning rates of learning. It seems that bright pupils do not always gain through separation, especially when no change is made in the curriculum. Essentially the same statement may be made for the slower pupils, who may actually lose when the brighter pupils are withdrawn. The amount a pupil learns, in other words, may depend less upon his membership in a class composed of pupils of similar native ability than upon certain other conditions and factors, among which are quality of teaching, learning ability, motivation, etc.

The problem of adapting instruction to individual differences is not adequately met through homogeneous sections. Such classification will result in a reduction of the range of ability and will thus simplify matters to some extent. It has been found, however, that the range of ability in sup-

<sup>18</sup> Breed, F. S., and Breslich, E. R. *Sch. Rev.* (1922), 30: 51-66, 210-26; Geyer, D. L. *Jour. Educ. Psych.* (1922), 13: 42-49.

posedly homogeneous sections may soon come to be much greater than the difference between groups.<sup>19</sup> The teacher is thus required to consider individual difficulties and individual rates in learning.

**Experiments in adjusting instruction to individual differences.** As pointed out above, homogeneous grouping only partially meets the problem of individualizing instruction. Moreover, some three fourths of our secondary schools are so small as to prohibit it entirely. We are thus facing the task of working out a technique which will allow the individual pupil to progress at his own pace, and which will at the same time permit the socialization of instruction. Numerous experimental attacks are being made upon this problem and a wealth of literature has appeared.

*Class organization retained.* A possible solution of this problem is found in the arrangement which provides minimum, average, and maximum assignments, and holds pupils to the quantity and quality of work they are capable of doing. The central features of this method are two. First, the subject-matter of a course is organized around central principles, which are taken up by the class as a whole. Once a process is thoroughly taught, the pupils proceed to work independently and are permitted to advance as individuals to the next point which requires explanation. A definite amount of work is laid out for the class, with supplementary assignments or projects for pupils capable of doing more than the minimum amount. Second, difficulties in learning and other obstacles to progress on the part of the individual and the class are determined as far as possible. The chief teaching effort is directed toward the removal of these difficulties. All this tends to bring into existence a classroom procedure greatly different from the traditional recitation. Outstanding examples of schools conducted on

<sup>19</sup> *Twenty-Fourth Yearbook* (1925), part 2, p. 133 ff.

this basis are the high schools conducted by the Universities of Chicago and Wisconsin.

*Class organization abandoned.* The Dalton and the Winnetka plans<sup>20</sup> are the leading experiments in individualizing instruction through methods which involve abandonment of the typical class organization. Although each has its distinctive features, both make use of a system of individual assignments, allow individual progress, and employ methods of individual testing. Under the Dalton plan, subject-matter of a course is organized into a series of related "jobs," each of which can be completed in a month's time. These "jobs" are divided into twenty units of work. A pupil signs a contract to complete a month's work in each subject, and he must complete twenty units of work in all his subjects before he may receive another month's assignment. With this limitation, he is free to budget his time about as he pleases, and to proceed as rapidly as he is able. Conferences are held for presenting new material or for review. Classrooms become "laboratories" or "subject workshops." An elaborate system of graphs has been worked out. These show the progress of the class, the progress of a pupil in all his subjects, the number of weeks' work done by a class, and attendance. At Winnetka similar individual instruction is given but it is limited to those subjects which represent the common essentials.

The author of the Dalton plan holds that it is a vehicle for the curriculum which permits socialization of the school. Its fundamental principles are freedom, by which is meant opportunity to work without the interruptions suffered in the ordinary school; coöperation, meaning participation in group or community life natural to those who are pursuing

<sup>20</sup> Limits of space will not permit extensive description of these plans. See Parkhurst, H. H. *Education on the Dalton Plan* (1922); Washburne, C. W. *Elem. Sch. Jour.* (1920), 20:52-68.



the same ends; and budgeting time, or freedom for the pupil to arrange his working day. It is held that, if these conditions prevail, pupils form habits and attitudes identical with those of adult community life.

At Winnetka socialization is taken care of by setting aside a part of the school day for activities which offer opportunity for self-expression and coöperative work. These activities include dramatization of history, assembly, committee work, field trips, etc.

*Results.* The Dalton, Winnetka, and similar plans are adaptable to secondary schools and they are becoming more and more frequent. However, greatest advance towards individualizing instruction has been made in the elementary grades. The following summary <sup>21</sup> of results therefore deals for the most part with elementary schools:

1. Time is probably saved for the faster pupils, and probably for those who would fail under the old system. Some children who are just below average ability probably lose time. So far the evidence does not show a saving of time for the average pupil.
2. All studies indicated that the amount of retardation is decreased.
3. Studies made at Detroit and Winnetka indicate that efficiency in tool subjects is definitely increased by individual instruction.
4. Available data indicate that the cost is no greater than under the old plan.
5. Teachers probably spend more time per day in correcting papers, preparing materials, and keeping records (Winnetka) than in a typical public school.
6. Elementary pupils trained under individual methods seem to be at least as efficient in high school as those trained under class methods, even when the high school uses class methods.

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<sup>21</sup> Adapted from summary given in the *Twenty-Fourth Yearbook* (1925), part 2, pp. 214-15.

## GUIDANCE WITH REFERENCE TO COLLEGE ENTRANCE

**The need of guidance.** Although the high school has been, and still is, predominantly college preparatory in nature, it has failed to develop on the part of its graduates anything like adequate knowledge of the function of a college education, nor has it helped its pupils to choose wisely the institutions they will later attend. Many young people base their selections upon very superficial reasons. Teachers exert great influence, to which is often due a custom or fashion for graduates of a single high school to attend in large numbers a certain college or university. Higher institutions realize that secondary pupils have no well formulated plans, and often adopt the practice of sending out speakers on active recruiting campaigns. College students, desiring to see their institution grow, organize athletic tournaments and special week-ends to which they invite prospective students, who are shown much of the social and little of the scholastic life of the college. These practices happily do not prevail at all colleges, but they are sufficiently widespread to cause serious concern.

A number of questions were addressed to some three thousand high-school seniors, about a month before their graduation, to discover how familiar they were with the courses of study they expected to pursue in normal school or college.<sup>22</sup> According to their statements, nearly three fourths of the entire number had little idea of what the advanced work was about. Nearly forty per cent said they had made no study of the college or normal-school catalogues to learn what the courses decided upon contained, and only ten per cent professed to have made anything like an extended investigation of the calling for which their work prepared. Pupils in smaller high schools gave larger percentages of negative replies.

<sup>22</sup> Data collected by the writer.

*How a college education is regarded.* The same group of pupils answered the question: "Taking into account the occupation you expect to follow, do you think a college education is necessary, that it is helpful but not necessary, that it is of little value, or that it is of no value?" Slightly more than half of the entire group thought a college education necessary; almost all the remaining pupils thought it helpful, but not necessary. A scrutiny of the replies led to the conclusion that the answers were made, not primarily from an analysis of the occupation and an analysis of college courses, but chiefly from the standpoint of whether or not the college is the only gateway to the vocation in question.

The pupils also indicated their intention with respect to college attendance. More than a fifth of the prospective teachers, engineers, and professional men were willing to dispense with college training, a fact which perhaps showed a mistaken idea of the needed preparation. More important were the attitudes toward the value of higher education and expressed intention of attendance. The few who regarded a college education as of little or no value very infrequently said they expected to enter college. On the other hand, about as large a percentage of those regarding collegiate training as helpful but not necessary expected to continue their education, as of the group who thought such training necessary. One can guess why an individual will attend college when he enters with the conviction that the work will be helpful, but not necessary. One can also hazard a guess with respect to the kind of work he will do.

**Expectation of entering college and actual matriculation.** Boys and girls whose parents have had a college education are often pointed toward college from childhood. It is never assumed that they will do otherwise than attend, and they take a college education as a matter of course. These children come for the most part from higher social and economic

levels, and theirs is the group which shows least elimination from secondary school. As a group they offer fewest problems in secondary-school guidance. In contrast to them are those who are uncertain whether or not they will continue beyond the secondary school, or those who are fairly certain that they will not do so. That intent to enter college is a strong indication of actual attendance is shown by Table 35.

TABLE 35. REPLIES OF 2069 COLLEGE FRESHMEN IN ELEVEN COLLEGES AND UNIVERSITIES TO THE QUESTION: "DID YOU KNOW THAT YOU WERE GOING TO COLLEGE WHEN YOU ENTERED HIGH SCHOOL?"<sup>23</sup>

	PER CENT
Certain of going. ....	30.7
Fairly sure of going. ....	30.3
Thought it probable. ....	14.3
Thought it possible. ....	11.6
Did not expect to go. ....	10.7
Were sure of not going. ....	2.5

**Intelligence and intent to enter college.** On the whole, that group of secondary-school graduates who plan to continue their education achieve higher scores on intelligence scales than do those expecting to end their formal education with the secondary school. But the group planning to go to college contains many who are at or below the average intelligence of high-school seniors. On the other hand, there are many among these not planning to continue their education who, judged by any intelligence standard, are capable of carrying a college course and even of achieving excellent work.<sup>24</sup> It is believed by many that these bright students should be encouraged to continue their education.

<sup>23</sup> Crathorne, A. R. *Educ. Ad. and Super.* (1920), 6:274-84.

<sup>24</sup> Colvin, S. S., and MacPhail, A. H., *loc. cit.*, p. 9. Book, W. F., *loc. cit.*, chap. 4. Odell, C. W., *loc. cit.*

*Bad college risks.* Many of the higher educational institutions find that a majority of their freshmen scoring at or below a given point upon an intelligence scale fail to do satisfactory work. Such students are often termed "bad college risks." An important consideration is the number of high-school seniors falling within this classification. This question can be answered at least tentatively by testing representative groups of high-school seniors and noting the number whose scores are below standard.

Tests were so given to seniors in Massachusetts high schools carefully selected so as to be representative of the State. When the scores were checked against the standard necessary for satisfactory work at Brown University, it was concluded that 40 per cent of the boys and nearly 60 per cent of the girls were bad college risks, while less than 40 per cent of the boys and only 22 per cent of the girls could be considered good risks. "It is a conservative estimate to say that not more than one half of the present seniors in the high schools of Massachusetts are likely to get much out of the ordinary academic courses of a typical arts college."<sup>25</sup>

*What shall be the procedure in guidance?* In the interpretation of the preceding statements several points should be considered. First, the minimum intelligence score necessary for successful work varies among the collegiate institutions, so that a student unable to get along in one college might do satisfactory work in another.<sup>26</sup> Whether or not this condition should exist among institutions of presumably the same grade is another question. Second, it is likely that more girls of a given mentality will succeed in college than will boys of the same ability, because girls show greater

<sup>25</sup> Colvin, S. S., and MacPhail, A. H. Intelligence of Seniors in the High Schools of Massachusetts. *Bur. of Educ. Bull.* (1924), no. 9, p. 4.

<sup>26</sup> Wood, B. D. *Measurement in Higher Education* (1923), p. 40.

seriousness and willingness to work at tasks they find disagreeable. Third, it is certain that for practically all high-school seniors the possibilities of learning have not been exhausted. It may be that a large portion of them cannot gain much profit from the typical liberal arts curriculum; the question should certainly be raised, however, as to whether curricula should be arranged which they can study with profit. Finally, we have no means of assuring ourselves that the present program is best for those bright pupils who have decided against attending college. In other words, it is not idle to ask the possible social result of a policy which advises a college education of the type now given for all persons of a given level of intelligence.

**Guidance in collegiate institutions.** Higher educational institutions are recognizing both the desirability and the necessity of providing guidance for their students. This work is naturally centered in the freshman year. General orientation courses may be provided, which undertake to give students correct ideas about the meaning of a college education, acquaint them with the lines of work offered and the occupations to which they lead, give perspective of extra-curricular and social activities, and familiarity with the customs and traditions of their institution; or the work may take on more definitely the guidance aspect, with information about different callings, analyses of students' capabilities, etc. Arrangements are made for analyzing causes of failure and definite courses may be offered for teaching students to study effectively. Many colleges have incorporated one or more of these features.

## CONCLUSION

**Guidance plans in common use.** An investigation<sup>27</sup> of the

<sup>27</sup> McDougall, H. R. *Ind. Arts Mag.* (1922), 11: 133-35. For a parallel study, see the *Twenty-Third Yearbook* (1923), part 2, p. 19.



plans used in guidance revealed the following practices in 130 high schools, representing 32 States:

Reports of local occupational surveys.....	54
Prevocational or guidance courses, grades seven and eight.....	46
Guidance in English classes.....	81
Teachers acting as vocational counselors.....	54
Courses in vocational civics or occupations.....	34
Using a text in the study of occupations.....	31
Written reports on local industries.....	68
Class excursions to local industries.....	75
A director or special teacher for vocational guidance.....	51
Principal acting as vocational guidance director.....	62
Deans acting as vocational guidance directors.....	26
Special vocational courses.....	97
School employment or placement bureaus.....	86
Central employment or placement bureaus.....	43
Employment supervision and follow-up.....	43
Using mental tests to aid in determining vocational fitness.....	36

Table 36 indicates the ways in which individual and group tests are used in the leading cities of the country. Practically all of the purposes may be classified as methods of arriving at individual differences or carrying on guidance. Strictly speaking, the tests are used more for purposes of educational than vocational guidance, although considerable use is made of them in giving advice pertaining to the vocations.

**A point of view toward guidance.** As yet the final technique for administering guidance has not been reached. Individual and group tests of intelligence, tests of special ability, and tests of educational achievement are of assistance, and they should be used. However, too much dependence should not be placed upon them. A study of occupations, carried on in a class especially arranged for the purpose or in connection with one of the usual studies, is likewise valuable, but by itself does not meet the situation.

TABLE 36. PURPOSES FOR WHICH INTELLIGENCE TESTS ARE USED IN JUNIOR-HIGH AND HIGH SCHOOLS IN 215 CITIES HAVING POPULATIONS OF 10,000 OR MORE <sup>28</sup>

PURPOSES FOR WHICH TESTS ARE USED	GROUP TESTS				INDIVIDUAL TESTS			
	Junior H.S.		High School		Junior H.S.		High School	
	Per Cent of Cities	Rank of Cities	Per Cent of Cities	Rank of Cities	Per Cent of Cities	Rank of Cities	Per Cent of Cities	Rank of Cities
Classification of pupils into homogeneous groups.....	56	1	41	1	22	2	14	3
Supplementing teachers' estimate of pupils' ability.....	44	2	33	2	24	1	16	2
Diagnosis of cause of failure....	29	3	24	3	23	4	25	1
Extra promotions.....	21	4	8	11	16	5	7	10
Guidance in the selection of high-school course.....	19	5	24	4	7	12	10	5
Placement of new pupils from other schools.....	19	6	10	10	9	8	5	12
Comparison with other school systems.....	18	7	13	7	5	14	7	9
Diagnosis of cause of success....	16	8	12	8	12	6	11	4
Regular promotion of pupils....	15	9	6	15	7	10	2	19
Establishment of classes for sub-normal pupils.....	14	10	7	13	18	3	8	7
Determining changes in method of presentation of lessons....	13	11	6	15	5	15	5	13
Vocational guidance.....	13	12	17	6	7	11	10	6
Determining comparative efficiency of teachers.....	11	13	10	9	6	13	7	8
Determining changes in subject-matter of courses of study....	9	14	7	14	4	17	5	14
Determining number of courses to be carried at one time....	9	14	21	5	4	18	7	11
Demotions.....	8	16	7	12	9	7	4	16
Establishing classes for super-normal children.....	6	17	2	20	8	9	5	15
Establishing special supervised study groups.....	6	17	3	19	4	16	1	20
Determining class marks.....	7	19	4	18	3	19	3	17
Admission to organized school activities.....	3	20	5	17	2	20	3	18

<sup>28</sup> *Bur. of Educ., City School Leaflet, no. 20, March, 1925.*

A similar statement may be made with reference to try-out courses. Experience indicates that it is better to use several or all of the methods, discussed in this and the preceding chapter, than to put too much faith in one.

The most fruitful conception of guidance is one which goes back to the old doctrines of apperception and self-activity. The theory of apperception teaches that new experiences are understood in terms of old. The richer the background of experiences, the better one is able to understand the new. Hence the necessity of providing numerous and varied experiences of a concrete nature. Only by such a procedure will the boy or girl be able to make an intelligent decision when called upon to do so. The doctrine of self-activity teaches that experiences are not gained by passive absorption, but through the activity of the learner. In short, the individual is able to understand because he knows something about the question at issue, and he learns to do by doing. The guidance program has thus reemphasized the principles of apperception and self-activity, and has given new meaning to the conception of education as growth.

Thus it is that the problem is not met by one or more devices. To be truly effective, guidance must color the entire curriculum. Tests become an aid in a more intelligent direction of the process of education, and education becomes more truly a process of intelligent guidance. The various studies, as well as extra-curricular activities and special or try-out courses, become agencies for directing and providing the experiences needed if decision is to be intelligent. The final outcome should be a citizen capable of self-direction.

**Problems to be considered.** The whole guidance program, and especially the use of tests as an aid in it, emphasizes a number of questions which should receive careful consideration before the organization becomes crystallized. Among these questions are the following: In what way does

level of intelligence condition learning? Is an undemocratic spirit fostered through segregating pupils on the basis of ability? Is the outstanding need for highly trained leaders, for better education of the common people, or both? Should we continue the policy of urging young people to attend high school and college? Should all bright boys and girls be educated for higher occupations, thus draining the lower classes of their capable leaders?

(1) As matters stand at present, there is little doubt that secondary education is best adapted to perhaps the upper half of the whole range of intelligence; college education is still more highly selective. Whether those whose intelligence scores place them in the lower half of the scale are incapable of profiting from secondary or even collegiate education is a debatable question. Given time, proper teaching, and other favorable circumstances it is conceivable that even the dullest could make some progress. Certainly advancement could be made by those whose intelligence is not below normal. The time and effort expended in learning algebra and other abstract subjects might not be justified; this statement should be applied to schooling in such subjects as community civics, general science, and oral and written English only after more thought and investigation than have as yet been expended.

(2) So far little tendency is manifest to deny secondary education to boys and girls of normal intelligence, and 80 per cent of the total population is regarded as being of normal intelligence or above. It is with increasing frequency that we meet the assertion that many young people are trying to enter college who would be better off at work. Usually this view is bracketed with the phrase, "as the college is now organized." Have we reached the place where we are willing to close the doors of the colleges to all but the intellectually superior? Adjustments and possibly curtail-

ments may follow, for secondary and higher education have already become a somewhat heavy tax burden. Such adjustments and curtailments should not leave out of account the seriousness of purpose of the various groups of young people desirous of continuing their education, nor the use to which their training will later be put.

(3) Whether or not attendance in secondary and college institutions continues to mount, the problem of adjusting the program of studies to individual differences will be before us. In large schools separation into classes on the basis of ability partially meets the situation; in the small schools it is more critical than ever before. The stage is set for an educational engineer who can devise methods which will combine individual teaching, individual progress, and measurement of individual progress with the best elements of the class recitation. Notable attempts are being made to solve this problem.

(4) Does possession of a high degree of native intelligence mean that such individuals should have an academic as contrasted with a practical education? Granting that high intelligence is necessary for positions of responsibility and for directing others, leadership is needed among all social and economic groups. As the secondary-school program of studies is now organized, "conservation of talent" may mean draining into professional, managerial, and higher business positions leaders needed elsewhere.

(5) There is a real danger that social distinctions will become more pronounced through the conservation-of-talent program. Many are of the opinion that it will be practically impossible to consign persons to inferior groups without cultivating to some extent their own feelings of inferiority, or to place other persons in superior groups without cultivating feelings of superiority. Certainly an individual of the latter group should realize the responsibility he owes to society,

and should not regard the superior training which the public school system may bestow upon him as an individual right to be used primarily as a means of furthering individual ends.

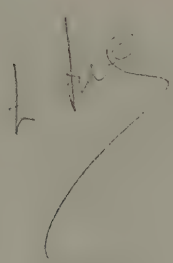
### TOPICS FOR DISCUSSION AND INVESTIGATION

1. What is "education as guidance"?
2. Sketch Plato's scheme of education for an ideal state. Why has it never been realized?
3. What difficulties in adjustment in the senior high school do you foresee as a result of junior-high-school classes grouped according to ability?
4. Is ability grouping here to stay, or is it a step towards something else?
5. Contrast the "Winnetka" and the "Dalton" plans.
6. Describe and evaluate the guidance program of the secondary school which you attended, or one with which you are familiar.
7. Discuss the following statement: "The school, itself, serves as a vocational motive for the tens of thousands of adolescents who make their schooling a real job — a serious business. One's major interest, at any time, is one's vocation. The organization of life around the school meets every requirement of a true vocation. That is the meaning we seek to attach to the school interpreted as a social organization." (Miller, H. L., and Hargreaves, R. T. *The Self-Directed School*, p. 170.)
8. Are we wrong in assuming that secondary-school or college students are vitally interested in their future vocations?
9. How would you undertake an investigation to determine the factors important in the final choice of a vocation?
10. How do students react to intelligence tests? Do they become accustomed to them, so that they regard them much in the same manner as they regard quizzes and final examinations? Does it matter how they regard them?
11. Examine one or more of the cumulative record cards used by city school systems. Suggest changes.
12. Describe some of the methods used by industrial concerns in selecting and placing their employees.
13. How do leaders emerge in industrial, professional, and political fields? Is there any guarantee that the "leaders," trained in accordance with the present conservation of talent program, would be accorded places of leadership?
14. Suppose a series of tests could be devised which would show accurately the vocation in which an individual would be successful. What parts of the guidance program could be omitted?
15. Why did you select the college of your attendance? Would you again select the same college?



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**PART. III**  
**THE CURRICULUM**



## CHAPTER XII

### THE AIMS AND OBJECTIVES OF SECONDARY EDUCATION

**Introduction.** In Part I a description was given of the system of public education, including statements of the purposes of secondary education and problems in its reorganization. In Part II occurred discussions of the mental and physical characteristics of secondary-school pupils, differences existing between individual pupils and groups of pupils, and educational and vocational guidance as conditioned by individual differences and social and economic needs. The task in Part III will be to examine the curriculum of the secondary school. Subsequent chapters will include, first, a consideration of the aims and objectives of instruction; second, an evaluation of the ways and means for selecting subject-matter; third, discussions of content and arrangement of subject-matter from the viewpoint of its contribution to each of the aims of instruction (Chapters XIV to XX); and finally, an explanation of the way the program of studies is organized.

In this chapter our energies will be devoted to the aims and objectives of education. While recognizing ultimate aims, such as "social efficiency," we shall attempt to show that ultimate aims must be analyzed into more specific activities if they are to exert the influence they should upon the schools. How the arrangement of subject-matter is affected by such analysis and by the psychology of learning will next receive attention. Finally, the place ideals and attitudes should occupy in an elaboration of educational aims will be considered.

**General educational aims.** An educational aim, as the term implies, shows the purpose or goal to be achieved by the educative process. It serves as a criterion for directing curricular activities. In this country, the chief educational ends finding general acceptance have been, and are, individual development and social efficiency. The former received much attention a number of years ago, when the problems growing out of increased population and urbanization were not so pressing as they are now. Then, also, the influence of certain writers (particularly Rousseau) who emphasized the necessity of following nature, in contrast to the older, more formalized education, was strongly felt. The social-efficiency aim has, in recent years, been greatly stressed. Closer contacts brought about by urban living conditions, the remarkable facilities for communication and transportation, and interdependence in economic relationships, have made imperative an education which trains individuals for coöperative effort.

No necessary conflict exists between the aims of individual development and social efficiency. However, if one or the other is not given due emphasis, the results are easily seen in the product of the schools. If the school is organized, subjects selected, and activities planned solely with reference to the welfare of the group, the result is likely to be an individual lacking in initiative, a follower of authority, a cog in the machine, and underdevelopment in other respects. Germany, prior to 1914, is often cited as an example of a nation whose educational policy was dictated almost entirely by the social efficiency aim. If, on the other hand, the individual is made to feel that his own development is of paramount importance, and if school practice is regulated primarily with reference to this end, the final result may be equally bad. Instead of individuals able to participate harmoniously in group activity the school turns out individualists,



intent upon what they receive rather than upon what they give, and less mindful of their duties than of their rights. Either of these final outcomes can be avoided, provided the relationship between the two aims is understood. This relationship is clearly and effectively expressed in the following sentence:<sup>1</sup> "The purpose of democracy is so to organize society that each member may develop his personality primarily through activities designed for the well-being of his fellow members and of society as a whole."

The general aims of education, then, as conceived by educational theorists, are individual development and social efficiency. In order to ascertain the way in which they affect the secondary school, an analysis of these aims is necessary.

**Spencer's analysis of aims.** More than sixty-five years ago, Herbert Spencer<sup>2</sup> analyzed the activities of the English secondary schools from the standpoint of the aim of education, which he conceived to be "complete living." He showed that the schools were controlled in their instruction, not by the needs of the pupils nor by the activities in which they would engage as adults, but by convention and tradition. Caustically remarking this, Spencer proceeded to show that education for complete living can take place only when one is aware of the leading kinds of activity which constitute human life. These he classified as follows:

*Those activities which directly minister to self-preservation.* This group he further subdivided into the primary activities which guard the body against mechanical destruction, and the secondary, which protect it from disease and death that follow breaches of physiological law. The former are learned for the most part in the natural environment of the child; the latter, however, require systematic instruction.

<sup>1</sup> *Bur. of Educ. Bull.* (1918), no. 35, p. 9.

<sup>2</sup> *Education* (1900), pp. 1-87.

Therefore, the schools should provide training in physiology, so that the individual may learn how the bodily mechanism works; instruction should cover the symptoms of diseases and bodily disorders; it should take account of the principles of ventilation, nutrition, and physical exercise. In short, Spencer made health an aim in education, and he pointed out that, without health and energy, the industrial, the parental, the social, and all other activities become more or less impossible.

2. *Those activities which, by securing the necessities of life, indirectly minister to self-preservation.* By this Spencer meant that knowledge which aids in gaining a livelihood. He admitted that reading, writing, and arithmetic were taught with an intelligent appreciation of their uses; in his opinion, however, this was insufficient for industrial needs. There should be added training in the knowledge underlying the right performance of all those processes by which civilized life is made possible, and this is largely the production, preparation, and distribution of commodities. Those scientific and mathematical principles in particular, thought Spencer, which underlie the occupations of the manufacturer, the builder, the farmer, and the merchant should be accorded their rightful place in the time set aside for instruction.

3. *Those activities which have for their end the rearing and discipline of offspring. Training for parenthood.*

If by some strange chance [said Spencer] not a vestige of us descended to the remote future save a pile of our schoolbooks or some college examination papers, we may imagine how puzzled an antiquary of the period would be on finding in them no indication that the learners were ever likely to be parents. "This must have been the curriculum for their celibates," we may fancy him concluding. "I perceive here an elaborate preparation for many things: especially for reading the books of extinct nations and of co-existing nations (from which indeed it seems clear that these

people had very little worth reading in their own tongue); but I find no reference whatever to the bringing up of children. They could not have been so absurd as to omit all training for this gravest of all responsibilities. Evidently then, this was the school course of one of their monastic orders.”<sup>3</sup>

Spencer had in mind a training for parents which would give acquaintance with the child's physical development, the diseases incident upon the period, principles of nutrition, methods of discipline, and the unfolding of the child's mind. He bespoke great improvement in health, industrial efficiency, and general intellectual and moral tone when parents are taught properly to rear their children.

Those activities which are involved in the maintenance of proper social and political relations. For the detailed accounts of kinds and the description of battles, Spencer would substitute a history dealing with the way local and national governments have grown, sketches of the daily lives of people, a delineation of the industrial system and the degree of æsthetic culture. Such a study he thought would elucidate the principles upon which national welfare depends, and would aid an individual to vote more intelligently and otherwise properly to conduct himself as a citizen. 4.

Those miscellaneous activities which make up the leisure part of life, devoted to the gratification of the tastes and feelings. Here he meant the enjoyment of nature, literature, and the fine arts — painting, sculpture, music, poetry. It would be a mistake to assume that these should be slighted, for without them life would lose half its charm. The training and gratification of the tastes are important, and the time will come when they will occupy a much larger share of human life than now. This will come when the applications of science have increased the amount of spare time at our dis- 6. use of leisure time

<sup>3</sup> From *Education*, by Herbert Spencer. Reprinted by permission of the publishers, D. Appleton & Co., New York.

posals: then poetry, art, and nature will rightly fill a larger space in the minds of all.

**Aims of the Commission on the Reorganization of Secondary Education.** It is very enlightening to place Spencer's analysis of the individual's activities in comparison with that of the recent Commission on the Reorganization of Secondary Education. It will be seen that the similarity is quite marked, which goes to show that educational aims and objectives, once established, are likely to endure for many years. This is particularly true when national, political, and social ideals undergo a small amount of change. In a democracy such as ours, we can expect that broad educational aims of our day will remain much the same as they have been in the past. Such changes as may come will be a shift of emphasis rather than the creation of new goals; rather a modification of ways and means of attaining the ultimate aims of education than an overturning of educational values. The statement of the objectives of secondary education, as formulated by the Commission on the Reorganization of Secondary Education, follows: <sup>4</sup>

*Health.* Health needs cannot be neglected during the period of secondary education without serious danger to the individual and the race. The secondary school should therefore provide health instruction, inculcate health habits, organize an effective program of physical activities, regard health needs in planning work and play, and coöperate with home and community in safeguarding and promoting health interests.

To carry out such a program it is necessary to arouse the public to recognize that the health needs of young people are of vital importance to society, to secure teachers competent to ascertain and meet the needs of individual pupils and able to inculcate in the entire student body a love for clean sport, to furnish adequate equipment for physical activities, and to make the school building, its rooms and surroundings, conform to the best standards of hygiene and sanitation.

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<sup>4</sup> *Bur. of Educ. Bull.* (1918), no. 35, pp. 11-15.

*Command of fundamental processes.* Much of the energy of the elementary school is properly devoted to teaching certain fundamental processes, such as reading, writing, arithmetical computations, and the elements of oral and written expression. The facility that a child of twelve or fourteen may acquire in the use of these tools is not sufficient for the needs of modern life. This is particularly true of the mother tongue. Proficiency in many of these processes may be increased more effectively by their application to new material than by the formal reviews commonly employed in grades seven and eight. Throughout the secondary school, instruction and practice must go hand in hand, but as indicated in the report of the committee on English, only so much theory should be taught at any one time as will show results in practice.

*Worthy home-membership.* Worthy home-membership as an objective calls for the development of those qualities that make the individual a worthy member of a family, both contributing to and deriving benefit from that membership.

This objective applies to both boys and girls. The social studies should deal with the home as a fundamental social institution and clarify its relation to the wider interests outside. Literature should interpret and idealize the human elements that go to make the home. Music and art should result in more beautiful homes and in greater joy therein. The coeducational school with a faculty of men and women should, in its organization and its activities, exemplify wholesome relations between boys and girls and men and women.

Home-membership as an objective should not be thought of solely with reference to future duties. These are the better guaranteed if the school helps the pupils to take the right attitude toward present home responsibilities and interprets to them the contribution of the home to their development.

In the education of boys, some opportunity should be found to give them a basis for the intelligent appreciation of the value of the well-appointed home and of the labor and skill required to maintain such a home, to the end that they may cooperate more effectively. For instance, they should understand the essentials of food values, of sanitation, and of household budgets.

*Vocation.* Vocational education should equip the individual to secure a livelihood for himself and those dependent on him, to serve society well through his vocation, to maintain the right relationships towards his fellow workers and society, and, as far as possible, to find in that vocation his own best development.



This ideal demands that the pupil explore his own capacities and aptitudes, and make a survey of the world's work, to the end that he may select his vocation wisely. Hence, an effective program of vocational guidance in the secondary school is essential.

Vocational education should aim to develop an appreciation of the significance of the vocation to the community, and a clear conception of right relations between the members of the chosen vocation, between different vocational groups, between employer and employee, and between producer and consumer. These aspects of vocational education, heretofore neglected, demand emphatic attention.

*Civic education* should develop in the individual those qualities whereby he will act well his part as a member of neighborhood, town or city, State, and Nation, and give him a basis for understanding international problems.

For such citizenship the following are essential: A many-sided interest in the welfare of the communities to which one belongs; loyalty to ideals of civic righteousness; practical knowledge of social agencies and institutions; good judgment as to means and methods that will promote one social end without defeating others; and as putting all these into effect, habits of cordial coöperation in social undertakings.

The school should develop the concept that the civic duties of men and women, while in part identical, are also in part supplementary. Differentiation in civic activities is to be encouraged, but not to the extent of loss of interest in the common problems with which all should cope.

The comprehension of the ideals of American democracy and loyalty to them should be a prominent aim of civic education. The pupil should feel that he will be responsible, in coöperation with others, for keeping the Nation true to the best inherited conceptions of democracy, and he should also realize that democracy itself is an ideal to be wrought out by his own and succeeding generations.

Civic education should consider other nations also. As a people we should try to understand their aspirations and ideals that we may deal more sympathetically and intelligently with the immigrant coming to our shores, and have a basis for a wiser and more sympathetic approach to international problems. Our pupils should learn that each nation, at least potentially, has something of worth to contribute to civilization and that humanity would be incomplete without that contribution. This means a study of



specific nations, their achievements and possibilities, not ignoring their limitations. Such a study of dissimilar contributions in the light of the ideal of human brotherhood should help to establish a genuine internationalism, free from sentimentality, founded on fact, and actually operative in the affairs of nations.

*Worthy use of leisure.* Education should equip the individual to secure from his leisure the re-creation of body, mind, and spirit, and the enrichment and enlargement of his personality.

This objective calls for the ability to utilize the common means of enjoyment, such as music, art, literature, drama, and social intercourse, together with the fostering in each individual of one or more special avocational interests.

Heretofore the high school has given little conscious attention to this objective. It has so exclusively sought intellectual discipline that it has seldom treated literature, art, and music so as to evoke right emotional response and produce positive enjoyment. Its presentation of science should aim, in part, to arouse a genuine appreciation of nature.

The school has failed also to organize and direct the social activities of young people as it should. One of the surest ways in which to prepare pupils worthily to utilize leisure in adult life is by guiding and directing their use of leisure in youth. The school should, therefore, see that adequate recreation is provided both within the school and by other proper agencies in the community. The school, however, has a unique opportunity in this field because it includes in its membership representatives from all classes of society and consequently is able through social relationships to establish bonds of friendship and common understanding that can not be furnished by other agencies. Moreover, the school can so organize recreational activities that they will contribute simultaneously to other ends of education, as in the case of the school pageant or festival.

*Ethical character.* In a democratic society ethical character becomes paramount among the objectives of the secondary school. Among the means for developing ethical character may be mentioned the wise selection of content and methods of instruction in all subjects of study, the social contacts of pupils with one another and with their teachers, the opportunities afforded by the organization and administration of the school for the development on the part of pupils of the sense of personal responsibility and initiative, and, above all, the spirit of service and the principles of true demo-

crazy which should permeate the entire school — principal, teachers, and pupils.

**Comparison of the two sets of aims.** The analysis of the Commission on the Reorganization of Secondary Education coincides to a remarkable degree with Spencer's analysis. Five of his objectives are almost identical with the divisions found in the Commission's analysis. He places a mastery of the processes of reading, writing, and arithmetic under education for vocation; the Commission would not deny that they contribute to that objective, but deem them equally important in other lines of activity. By making them an objective in secondary education they will be insured more time and attention in the school program of studies.

A disparity between the two classifications is Spencer's omission of ethical character as an aim. But he describes the final goal of education as "complete living," and it would be surprising if he had any objection to ethical character as a goal in education. As a matter of fact, Spencer in a later essay referred to the lack of moral training as the most glaring defect of all. As a remedy for the situation he seemed to favor improvement through methods of training and discipline, and he expected his recommended education for parenthood to be the most important means of achieving moral education.

The difference in stress placed upon education for worthy use of leisure time in the two analyses deserves comment. Spencer believed that "accomplishment, the fine arts, *belles-lettres*, and all those things which, as we say, constitute the efflorescence of civilization, should be wholly subordinate to that knowledge and discipline in which civilization rests." They should occupy the leisure part of education, just as they occupy the leisure part of life. This view has changed. The greater amount of leisure time, which Spencer predicted, and a better understanding of the important part played by

leisure-time activities in producing high moral and ethical character and in contributing toward "complete living," have led to greater emphasis upon training in worthy use of leisure time.

**Bobbitt's analysis of objectives.** Bobbitt brings out clearly the necessity of determining, through an analysis of the broad range of human experiences into major fields, the ultimate objectives of education. He stresses the need of scientific analysis, and shows that there has been no such analysis of recreative activities, but little in the field of hygiene, and not much to decide upon the abilities needed in the rearing of children. He also calls attention to the fact that no one knows what specific things a good citizen should do. His list of major educational aims follows.<sup>5</sup> He does not consider this as final, and he is of the opinion that each curriculum-making group should make the divisions which seem best suited to it and for its purposes. Bobbitt has analyzed these divisions in detail:

1. Language activities; social intercommunication
2. Health activities
3. Citizenship activities
4. General social activities — meeting and mingling with others
5. Spare-time activities, amusements, recreations
6. Keeping one's self mentally fit — analogous to the health activities of keeping one's self physically fit
7. Religious activities
8. Parental activities
9. Unspecialized or non-vocational practical activities
10. The labors of one's calling

The chief difference, aside from emphasis, between the foregoing list and the aims of the Commission on the Reorganization of Secondary Education is found in the way education for leisure time is regarded. Bobbitt takes care of

<sup>5</sup> Bobbitt, J. F. *How to Make a Curriculum* (1924), pp. 8-9. See also his *The Curriculum* (1918), chaps. 1-3; *Sch. Rev.* (1920), 28:738-49.

leisure occupations as the play-level in each of his other divisions. Natural mental activity, the desire to learn, and curiosity keep one active. In this way things are learned, not because they are helpful, but because of the love of the activity. Many of the things a child learns in this way later turn out to be helpful, so that much of his education is really gained upon the play level. In case of the adult, experiences upon the play level are very abundant in some of the major divisions, and this is the method of education for spare-time activities, amusements, and recreations. Education on the work level is definite training in activities to produce.

**Significance of the foregoing analyses of aims.** The curriculum is the vehicle by which we reach the objectives in the secondary school. If an examination is made of the present curriculum to see whether its organization is the best organization for reaching the objectives set up, a negative conclusion will probably be reached. The chief difficulty is that the materials of instruction are organized in terms of subjects, while the objectives imply combinations of knowledge and activities seemingly independent of the various subjects. A more detailed consideration of this problem is necessary.

*Subjects represent a logical classification.* Education is regarded as the process through which the culture of the race is transmitted to the young. The whole body of culture is very extensive, and is comprised of numerous diverse elements. At best it is unwieldy, and often is difficult of evaluation. Unwieldiness becomes less troublesome and evaluation is more easily made when the different elements of racial culture are given an orderly arrangement. Such an arrangement or classification exists. That knowledge which centers about a distinguishing core of thought or activity has been arranged in logical order, and given a name.<sup>6</sup> Know-

<sup>6</sup> Ruediger, W. C. *Principles of Education* (1910), p. 171.

ledge centering about mass or force is arranged and classified and called physics, that having to do with mind or behavior constitutes psychology, and so on. Thus we have the various arts and sciences. These appear in the curriculum in the form of the various subjects.

*Aims have been stated in terms of subjects.* Educational aims have often been stated in terms of these classifications. Butler thinks of racial culture as the scientific, the institutional, the literary, the æsthetic, and the religious inheritance.<sup>7</sup> He conceives the purpose of education to be to put the individual, during his period of youth, in possession of these spiritual possessions. Similarly, De Garmo's classification<sup>8</sup> includes the laws and facts of physical nature (science and mathematics), observed and formulated by the mind but not dependent upon the mind for their existence or validity; the linguistic, literary, artistic, and institutional constructions (the humanities), which have their origin in the human mind; and those divisions of knowledge which originate when the laws of nature are applied to produce the conditions of well-being in the human race (the economic sciences). He then proceeds to discuss the place of each of these subject divisions.

The importance of all this to the secondary-school curriculum can hardly be overestimated. Materials of instruction have always been arranged according to the demands of the subjects, and for the most part they are so arranged to-day. Admittedly the conception of education as the assimilation of racial cultural inheritance is sound; and the necessity for classifying that culture is unquestionable. The question at issue is whether the nature of the learner is such that some other arrangement would render assimilation

<sup>7</sup> Butler, N. M. *The Meaning of Education* (1898), p. 17 ff.

<sup>8</sup> De Garmo, Charles. *Principles of Secondary Education: the Studies* (1908), p. 45 ff.

more rapid and more certain. Educational theory answers this question in the affirmative, and turns to the project for the solution of the problem of method.

**The project method.** Limits of space will not permit an elaboration of the educational principles involved in the project. These are, however, briefly and pointedly summed up in the following quotation.<sup>9</sup>

Standing out prominently, almost objectively, as a clearly thought plan to be converted into reality, the project contains the most important elements of a standard unit of mental effort. First, it is an important whole. Secondly, it is dynamic in its essential forward movement. Thirdly, it organizes and uses knowledge on the basis of a definite purpose. Fourthly, it sets up a new series of problems requiring continuous, rational effort. Fifthly, it works out a practical result which is embodied in a concrete object or situation in real life. Sixthly, as an end result of the whole movement, from original conception to final objective realization, it leaves in the mind a knowledge product which serves to introduce and explain other kindred projects. It has a future as well as a past and connects up between the two. Thus it contributes to the continuous organization of knowledge.

*Curriculum-building emphasizes projects.* If the activities of secondary education are to be determined through an analysis of life activities, they will be in terms of projects. Similarly, if subject-matter is to be arranged so as to permit most effective teaching, it will be organized into projects. It requires no stretch of the imagination, therefore, to see the importance that teaching by projects is destined to play. So far as we can now see, it may prove desirable to give drill to fix those essentials not sufficiently ingrained by project teaching, and training in subject-matter prerequisite to later projects. On the whole, however, it seems inevitable that the main line of approach will be through the project.

<sup>9</sup> McMurry, C. A. *Teaching by Projects* (1920), pp. 13-14. Reprinted by permission of The Macmillan Company, publishers.



*Less stress to be placed upon subjects.* When confronted in daily life by a problem or project, one does not consider in his attack upon it whether he is using data from history, civics, or English, or whether his principles come from mathematics, biology, or mathematical science. On the contrary, he employs whatever knowledge or skill he possesses, regardless of the academic field. Thus the lines which mark off the various fields of subject-matter will be ignored in collecting material for the curriculum, and later they will perhaps be ignored in organizing it for teaching. While it may prove convenient to gather a number of projects together under one of the subjects for purposes of instruction, it seems certain that the lines of demarcation between the subjects will become fainter and fainter and some or all of them will disappear. Parts of nature study, physical geography, biology, physiology, and botany have already been amalgamated in general science. Community civics, in its attention to the problem of water supply, transgresses the domain of biology; in the same way it trespasses upon the domain of hygiene in its consideration of community health. It seems that little is gained and much is lost through attempting to hold to subject divisions in the analysis of social activities; similarly, it seems that little would be gained in teaching through a redivision to suit the convenience of the various subjects.

**The importance of ideals and attitudes.** The new conception of curriculum-building does not stop with an analysis of the things children or adults do, or even with incorporating them in the courses of study. The work would not be worthy of the effort if conduct were not modified. Teaching is no longer regarded merely as broadcasting information and testing to see if it has been assimilated. It is considered incomplete unless pupils are able to apply and to express in action. Even this is not a final statement of the matter.

Not only should the student have the information and skill to carry an enterprise to completion when he is asked to do so; he must also have the disposition to act when directions are removed and restraints lifted. It is one thing to teach an individual the rules and regulations of automobile traffic, and to train him to the point where he can carry them out; it is another thing to instill along with knowledge and skill a desire to obey the traffic regulations. It is to be hoped that those busy in determining scientifically the content of the curriculum will not forget, as some are prone to do, that teachers must know how to teach the new materials in such a way as to insure modification of conduct beyond the time when the pupil quits the school. For this result mere information does not suffice; and development of ideals and attitudes, therefore, becomes an important aim of education.

*Ideals and attitudes described.* An ideal is a general idea or a group of ideas to which are attached strong feeling and a pronounced tendency to action. It differs from the concept by being less precise and more general, and in containing a larger amount of emotional coloring. Like the concept, it is based upon many separate experiences or reactions. Its stirring quality is due to the vividness of the image or thought, and to the fact that a component part of strong feeling consists of muscular and organic sensations. It is similar to a prejudice, since it is a general idea with an accompaniment of strong feeling; it is distinguished from a prejudice by being more sane and reasoned. Every one recognizes the persistence of ideals; similarly, their value in shaping conduct is well known. They comprise the motives of action. They serve as standards by which is judged the value of a new idea, and they predispose the individual to action that is in accord with the ideal.

The description of an ideal is in reality broad enough to

include "attitude." It may prove helpful, however, to regard an attitude as a predisposition toward action in a certain direction, which springs from the thoughts and ideals the individual entertains. Attitudes are adjustments brought by stimuli, and may be looked upon as the "tendencies to action" included in the above description of an ideal. General attitudes result from single vivid experiences or from the fusion of many specific acts. Given a task which the pupil accepts as his own and which he works at with interest, and we have a partially formed attitude. Repeat at intervals and a sufficient number of times the task or a similar one, keeping up interest and placing more and more responsibility upon the individual, and the result is an habitual mode of thought, a permanent frame of mind, or an attitude, which will foretell infinitely more about behavior than mere knowledge.

The importance of ideals and their correlate attitudes is such that they should be given an important place in instruction. They are not formed independently of subject-matter; on the other hand, mastery of subject-matter does not guarantee the right kind of ideals. A clear consciousness of the ideals we desire to cultivate is the first prerequisite to their growth. Lists of ideals should therefore be formulated as definitely as it is possible to formulate them. These should be raised, along with the things children and adults should know and do, to a commanding position in our statements of educational aims.

*Attitudes an inevitable result of instruction.* The manner in which ideals and attitudes come into existence makes them an inevitable result of instruction. Few experiences occur without feeling; the most frequent occurrence is perhaps the action which has become habitual. On the other hand, new experiences bring feelings of pleasantness and unpleasantness, satisfaction or dissatisfaction. The experiences mak-

ing up the curriculum are new in whole or in part; otherwise they would have no place. Added to this is the fact that no one, particularly the adolescent, is devoid of feeling, and we have a situation which will produce attitudes whether we wish them or not. Under the present régime, undesirable attitudes frequently result through the association of unpleasantness and dissatisfaction with certain thoughts and actions. Many boys and girls leave school as soon as the attendance laws permit, and when questioned they say they prefer to work rather than attend school; continuation-school pupils have similar feelings regarding the eight hours they spend in class; and bright pupils sometimes show the disposition to "get by." Unless ideals, attitudes, and points of view are recognized, unless they are clearly formulated and made coextensive with the social activities in the formulation of secondary-school objectives, the new curriculum will be less effective than it should be in influencing conduct.

*The law of forgetting.* Sooner or later, unused knowledge will lapse. Every teacher knows this, although he is disposed to treat pupils as responsible at any time for material previously assigned. The teacher himself forgets. He maintains his own knowledge through using it constantly in his teaching. Even so it escapes him to some extent, so that it becomes necessary to prepare for classes. In short, teacher and pupil are subject to the psychological law which may be formulated thus: Immediately after the completion of the act of learning, forgetting takes place very rapidly; thereafter, more and more slowly, until a time is reached when, from day to day or from week to week, the loss is very small. Relearning occurs with less effort and less expenditure of time. These facts have been shown for all types of learning. Details are first to fall away. The residuum is in the form of general principles, ideals, and attitudes. The law of forgetting alone is sufficient to warrant the organization of

teaching materials from the standpoint of general topics and their correlate ideals and attitudes.

## TOPICS FOR DISCUSSION AND INVESTIGATION

1. What aims really motivate the average teacher? Are pupils usually conscious of an aim?
2. Make a diagram or outline to show how the subject of your major interest contributes to each of the several educational objectives.
3. Do you agree that the formation of ideals, rather than mastery of subject-matter, should be the chief aim of instruction?
4. As a result of his secondary-school education, what does the average graduate know, what can he do, and how has his character been modified?
5. Note the following statements:
  - (a) "Education is primarily for adult life, not for child life. Its fundamental responsibility is to prepare for the fifty years of adulthood, not for the twenty years of childhood and youth."
  - (b) "In this school the life of the child becomes the all-controlling aim. All the media necessary to further growth of the child center there. Learning? — certainly, but living primarily, and learning through and in relation to this living."

How would a curriculum organized from the standpoint of statement (a) differ from one organized from the standpoint of (b)?
6. How far can we go at present in organizing subject-matter in terms of aims and objectives rather than in terms of English, mathematics, etc.?
7. List the ideals which should motivate work in history, mathematics, etc. How should the work be organized and presented so as to insure the growth of ideals?
8. Is it true that political training is dependent upon training for vocational efficiency, for social life, and for cultural efficiency? (See Smith, W. R. *An Introduction to Educational Sociology*, page 151.)

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## CHAPTER XIII

### THE SELECTION AND VALIDATION OF CURRICULUM MATERIALS

What is the curriculum? The whole curriculum may be regarded as the body of culture which has accumulated from generation to generation and which must, if civilization is to advance, be transmitted to the young. No attempt is made to embody the totality of racial culture in the curriculum of the secondary school. A part of it belongs in the elementary school, and another part in the college and university. In Chapter II it was shown that the elementary school stimulates the general mental and physical growth of its pupils, organizes their instincts and capacities into working habits, furthers the process of socialization, and gives an introduction to the culture of the race. Higher educational institutions, as shown in Chapter III, foster research, provide professional training, and dispense higher learning. In a rough way, the curriculum of the secondary school may be regarded as comprising those cultural materials not encompassed by the elementary or college curriculum.

There is a further delimitation of the secondary-school curriculum. A commonly accepted principle has it that the school shall teach only those things not effectively taught by other institutions. Great difficulty is encountered, however, when the attempt is made to arrive definitely at the nature and extent of training given by agencies without the school. We know in a general way that men learn from their association with others. We have depended upon the family for certain types of social training, and to an extent for vocational guidance. The church has as its province training in

religion and morals. From the public press education on topics of the day is given, and public opinion is formed. Similarly, our stock of information is increased by lectures, the theater, the playing field, clubs and fraternal orders, and by similar organizations and institutions of all kinds. Meanwhile the haphazard nature of the training given by some of these institutions, the undesirable and even harmful influence of some, and the failure of others to exert the influence they should, place greater and greater demands upon the school. The task of deciding what should be taught and what should not be taught would be much easier if we could assign to this or that institution a definite type of training. This is obviously impossible. The best solution of the problem seems to be for the school to determine as definitely as may be the training that is most likely to issue from this or that source, and to guide the pupils' progress along all lines where there is need of doing so.

Even when account is taken of the influence of out-of-school agencies and instruction given in elementary or in higher educational institutions, a vast amount of work remains to be done in the secondary school. As a matter of fact, the demands are so great that it becomes impossible to meet all of them. It therefore becomes imperative to select, from the great mass of subject-matter, those elements which best contribute to accepted educational ends. The methods for selecting and validating subject-matter comprise the theme of this chapter.

#### THE THEORY OF TRANSFER OF TRAINING AND ITS EFFECT UPON THE CURRICULUM

**The old view of transfer of training.** Before the experimental psychologists attacked the problem, it was thought that training in a given mental power or faculty, through its exercise in a specific field, would manifest itself to approxi-

mately the same degree in other fields where that particular power or faculty was employed. For example, if the power to reason were developed in mathematics, it was assumed that the individual would be able to reason equally well upon business or political questions; if the memory were strengthened through its exercise upon the facts and dates of history, it would show increased efficiency in all other situations where memory was used. This is the old theory of formal discipline, and it has many adherents to-day. There are many teachers — in elementary schools, high schools, and colleges — who disregard or give a secondary place to the intrinsic values of the curriculum, and who hold that the chief purpose of education is the formal development of the mind's powers.

*Formal discipline and the Committee of Ten.* By far the largest amount of experimentation to determine the way in which transfer of efficiency from one field to another occurs has been made since 1890. Owing to the psychological theories current at the time when the Committee of Ten was appointed (1892), the stress it placed upon the formal aspects of education is not surprising. A close examination of the recommendations contained in the Report will reveal many passages which go to show that the Committee was dominated by the "old" psychology; other passages can be found, however, to which the most ardent exponent of the "new" psychology will offer little objection. On the whole the Report emphasized to a disproportionate degree the formal aspects of training. The administrators of the high schools and the members of the teaching corps held similar views, because they were influenced by the same psychology and because they were guided by the recommendations of the Committee and by established habits in teaching. Thus it came about that the formal aspects of the ancient and modern languages, mathematics, the sciences, history, and

even English, which constituted practically all the curricular offering proposed by the Committee of Ten, were greatly emphasized. The content side of the curriculum was not neglected, but it took a place subsidiary to mental training.

*Influence of the doctrine of formal discipline upon the "practical" subjects.* Subjects introduced into the secondary school for their practical and utilitarian purposes often have been greatly influenced by the doctrine of mental discipline. They have had to meet the criticism, aloofness, and disdain of the more aristocratic subjects which were recognized instruments of mental training. Since there seemed to be only one side to the argument, the situation was met by the process of joining rather than opposing. Manual training, under heavy fire shortly after its introduction to this country in 1876, soon came to be advocated on the grounds that it trained in reasoning, developed skill of hand and eye, exercised the power of imagination, and strengthened the will. Manual training exercises were revised into a logical and systematic form, and these exercises were prescribed for all. The advocates of music and drawing, agriculture, home economics, and the commercial subjects likewise felt called upon to show that their subjects possessed unique characteristics which guaranteed the development of desirable mental faculties. The result was that the original purposes of these subjects came to occupy a less important position, while logical arrangement and organization of subject-matter was stressed, and formalism crept into instruction.

**The new theory of transfer of training.** As a result of a large number of experimental investigations upon the method and the extent of transfer of training gained in one field to others, a new theory of transference has been formulated. The first experimental investigation was made by James more than thirty-five years ago, and his results be-

came generally known with the publication of his *Principles of Psychology* in 1890. Other psychologists were naturally interested in the problem, so that a great volume of work has been done and an immense amount of literature has appeared. It should again be noted that the problem has been attacked since the Report of the Committee of Ten was issued and that that body could hardly have done otherwise than to formulate recommendations in accordance with the psychological theory then current. While the problem is not settled, it is now possible to state a theory of transfer acceptable to the majority of psychologists. This theory is at variance with the old view to such an extent that a re-examination of the materials of high-school instruction is essential.

There is an erroneous impression that educational psychologists deny the possibility of transfer or spread of improved efficiency gained in one field to other fields, but that efficiency is limited to the field wherein it was first acquired. However, there is no question that transfer does take place. The problems are, first, the way it is effected, and secondly, the extent or amount of transfer.<sup>1</sup>

**The avenues of transfer.** The avenues or channels through which improvement is carried from one field to another have been designated by Thorndike as "identical elements." These he has further classified under the subtitles of "identity of substance" and "identity of procedure."<sup>2</sup> To these has been added a third class, which is called "identity of aim" or "ideal."<sup>3</sup> An identical element is a fact, a principle, a mode of procedure, or an attitude of mind which is common to two or more situations.

<sup>1</sup> Only the barest outline of the way transfer occurs can be presented here. For more complete treatments the reader is referred to the bibliography at the end of the chapter.

<sup>2</sup> Thorndike, E. L. *Principles of Teaching* (1906), p. 243.

<sup>3</sup> Ruediger, W. C. *Principles of Education* (1910), p. 114.

*Identical elements of substance.* An identical element of substance is a fact or principle which is common to two or more situations. A series of illustrations will make the meaning of this statement clearer. The Renaissance period is studied both in political history and in the history of literature. If the pupil gets from his study of history the idea of what the Renaissance really was, and if he carries this idea to his literature and recognizes it as information he has acquired elsewhere, it is obvious that he is transferring training. The boy or girl who has mastered formal English grammar will find Latin simplified, because much of Latin grammar is identical with English grammar. If the pupil finishes his work in Latin with a good command of the vocabulary, his vocabulary in English should be materially increased, since he has at his disposal a knowledge of numerous root words from which many English words are derived. Courses prerequisite to enrollment in advanced college courses are such because they contain the fundamentals — identical elements — of the advanced work. The pupil who doubts the value of a course he is obliged to study is unconsciously expressing the fact that he can recognize no elements which are identical with other situations. Such examples could be multiplied indefinitely. Each subject in the elementary school, the high school, or the college contains almost a limitless number of identical elements of substance.

*Identical elements of procedure.* When a method of work or a habit of thinking is common to two or more situations, it is termed an "identical element of procedure." To illustrate, the reasons for the science requirement which is so common in secondary schools are two: first, it is held that the student should have a knowledge of the common scientific facts and principles which find numerous applications in the industrial world (identity of substance); and second, it



is thought in many quarters that this is the way, par excellence, to cultivate the scientific method of thought, so that the pupil may avail himself of this valuable tool when he faces business, political, or domestic problems. Again, algebra and geometry contain little which will later prove to be a benefit to many of the pupils who study it. This fact is not denied by mathematics teachers; on the contrary, they are likely to admit it frankly, and to defend their subject upon the grounds that it produces valuable mental habits which will function in non-mathematical situations. This is particularly true of geometry. Perhaps its primary claim for a place in the curriculum is that it is a wit-sharpener, a developer of habits of reasoning. The logical method of attack, which geometry certainly permits if it does not demand, is thus a method of procedure which may be applied in other situations where logical reasoning is needed.

*Identical elements of aim or ideal.* This class of identical elements is not sharply marked off from the preceding one, so that some uncertainty may be present when one undertakes to classify an item under the head of "method" or "aim or ideal." It is, however, an aid to thinking concretely upon the methods by which transfer occurs.

There is little doubt of the possibility of developing ideals through the instruction given in any or all of the high-school subjects, and certain it is that a list will be found when the merits of a specific subject of instruction are discussed. It is certainly within reason to expect that the love of truth may be instilled in science instruction, and that the attitude so engendered is quite likely to function in the study of the social sciences, in the pursuit of mathematics, or in many of the affairs which the student encounters after he leaves these studies behind. Mental industry, habits of mental work, the tendency to neglect distracting and irrelevant elements, ideals of thoroughness, ideals of accuracy and precision, and

desirable attitudes toward study and intellectual achievement have often been mentioned as elements which are identical in the study of foreign language, the study of other school subjects, and numerous out-of-school situations. Similarly, we may mention the ideals of law-abidingness and patriotism which it is the duty of the social sciences to instill, and truthfulness, personal honor, and the like which might come from literature and biography.

**Transfer through the process of generalization.** Judd is perhaps foremost among those who believe that transfer is dependent upon ability to generalize a conclusion from previous experiences, and to recognize the fact or principle thus generalized in new situations.<sup>4</sup> For example, the pupil concludes, by dint of much effort and explanation, that a common fraction is reduced to a decimal by dividing the numerator of the common fraction by the denominator. By similar methods, he is aware that common fractions must be of the same denominator to be added, and that common and decimal fractions cannot be added indiscriminately. He meets, let us say, a problem where it is necessary to add common and decimal fractions and to express the results decimally. His knowledge of how to proceed will be based upon his recognition in the new problem of principles previously mastered, and which have been mastered through the process of generalization.<sup>5</sup>

In the minds of many psychologists a theory of transfer based upon the process of generalization is not opposed to one which conceives of transfer as occurring through identical elements. On the contrary, when sanely interpreted, the two theories are useful supplements to each other. Without doubt the discussion of the problem of discipline

<sup>4</sup> Judd, C. H. *The Psychology of High-School Subjects* (1915), chap. 17.

<sup>5</sup> For a detailed explanation of the process of generalization, see the chapter on induction in a text on methods of teaching.

has been made more definite and concrete by the theory of identical elements, and emphasis is placed upon the conscious recognition of identical elements in many diverse situations by the theory of transfer through generalization.

**Factors influencing the amount of transfer.** *Similarity of situations.* Other things being equal, the more nearly "identical" two situations are, the greater the likelihood of transfer. Conversely, the further the individual must carry his knowledge or training, the greater the chance that he will not profit by it. In other words, the more hidden the point in question by its entanglement with other elements, the less is the probability of its recognition. A boy who has learned the meaning of *urbs*, *urbis*, will probably be able to use his knowledge more readily in arriving at the meaning of "urban" than in determining the meaning of "suburban." There is no doubt that the student of chemistry will transfer his laboratory method to the study of physics more readily than to the study of history.

*Transfer may be delayed.* Increased efficiency resulting from the exercise in a mental function in one field may be extended to many other fields, and one need not make the transfer immediately. If general ability in vocabulary is permanently improved by as much as five per cent, through a year's study of Latin, it is entirely possible that the time was spent very profitably, since innumerable situations may be encountered during the lifetime of the individual in which this type of learning will be used.

*Negative transfer.* It is altogether possible for training received in one situation to hinder rather than to assist training attempted in another. This seems to be true whether the habits are motor, intellectual, or emotional. The untutored beginner in golf or baseball is likely to form habits which impede his progress when attempts are made later to train him in proper methods. Any one can furnish personal

examples of instances where it is difficult to remember a name because it was first misunderstood and learned incorrectly, or of a word which persists in being troublesome because of an earlier incorrect habit of spelling.

*Individual differences.* Different people vary greatly in ability to generalize, and it has been shown that the process of generalization plays an important part in transfer. One is able to "see the point" immediately, another requires much explanation; one is hindered little by extraneous factors, the other has great difficulty in separating the point at issue from the non-essential factors. Methods of generalization may be improved by training — teaching would be sorry work if such were not the case — but a part of the difference in ability to carry experience to a new situation is undoubtedly due to native intelligence, which is a gift of biological heredity.

*The teacher an important factor.* Perhaps, after all, the most important agent in producing the maximum amount of transfer is the teacher. The most interesting subject from the standpoint of content and organization may be presented in a dry, wooden manner, so that few values of any sort will accrue to the student. On the other hand, if the teacher is alive, interested in his subject and in teaching; if he demands thorough work of his pupils; if he places emphasis upon topics of real importance, and is careful to see that applications of facts, principles, and modes of procedure are made for his students to both school and out-of-school situations; his class will feel that they have "gotten something" from his course — that is, they will have been able to transfer their training.

**What subjects offer greatest transfer values?** To what extent is training gained in one field carried over to another? **What subjects offer the greatest possibilities of improving general efficiency through transfer?** At present no final

answer can be given to these questions. It is difficult to rule out extraneous factors in making measurements; it is not always possible for an individual to be certain of the sources of his original training; mental processes are exceedingly complex; and training endures for many years. Some educational psychologists are of the opinion that the amount of transference is very small; others take more liberal views in the matter.

*Pure vs. applied science.* Theoretically, those subjects offer the greatest possibilities for transfer which contain the largest number of facts, principles, methods, and ideals which are found in other situations, and which permit the broadest application of them. On these grounds it has been held that the older subjects, particularly pure science and pure mathematics, have a decided advantage. Their organization is determined, not by the applications which are possible in a given field, but by the demands of science or mathematics. Hence they will contain a larger number of elements which will be useful elsewhere. Moreover, they will permit application to a broader field than will applied science or mathematics, since it will be easier to detach a principle and to generalize upon it, and since illustrations of the principle may be given from any field. Applied science is not concerned with completeness, and scientific principle is often taught along with its application with no attempt at generalization. Hence, applied science is inferior in transfer values to pure science. It contains fewer "identical elements" than pure science, those which it does contain are not raised to the plane of concepts, and the field of application is narrower.

The foregoing arguments possess a high degree of validity. However, the thoroughness with which a student does his work and the interest he has in it are also potent in determining indirect values. Teachers are likely to credit stu-



dents with more knowledge than they actually have, and to assume that they see connections and make applications which they themselves see and make. Whether or not it is due to improper teaching of the pure sciences, greater interest is likely to attach to the applied sciences.

*The Classical Investigation.* A few years ago the American Classical League, aided by a grant by the General Education Board, undertook an investigation to ascertain the status of the classical languages in the secondary schools of the country. A considerable part of this investigation had to do with the indirect values accruing from the study of Latin. The methods used in arriving at the conclusions, shown in the quotation,<sup>6</sup> require too much explanation to be detailed here.

Moreover, an analysis of the records made by 10,000 College Board candidates in nine leading college preparatory studies show that the Latin students not only do better than the non-Latin students in all subjects outside of Latin and Greek, but also that with a single exception, which is probably easily explainable, the records in all these non-classical subjects go higher as the amount of Latin studied is greater. The margin of superiority of the Latin group of students as a whole is about 13 per cent. Several methods of attempting to ascertain the difference in initial ability between Latin and non-Latin college preparatory pupils also seem to show that only about one-tenth of the 13 per cent superiority of the Latin students at the end of the secondary course is to be attributed to this factor, and that nine-tenths of the superiority is due to something gained from the study of Latin itself. In other words, so far as measured by standing in the College Board examinations, a Latin student seems to gain during the secondary course more than 10 per cent over the non-Latin student of the same initial ability.

*Thorndike's experiment.* For years we have heard the statement, says Thorndike, that the amount of improvement in mental ability (or mental abilities) due to studies is large, and this statement has been followed very often by the

<sup>6</sup> *The Classical Investigation*, Part One (1924), p. 237.



assertion that there are great differences between studies with respect to mental training. Thorndike recently completed an extensive investigation to determine the amount of general improvement due to studies pursued in high school and the value of a specific study in bringing about general improvement. His elaborate technique will not be described here, but his most important conclusions will be cited:<sup>7</sup>

(1) The amount of general improvement due to studies is small, so that for the most part the values of high-school studies should be decided by the training which they give, and not by their disciplinary values.

(2) "The expectation of any large differences in general improvement of mind from one study rather than another seems doomed to disappointment." In particular, the languages and mathematics have no claim for preëminence. If we take mathematics and foreign language on the one hand, and cooking, sewing, and stenography on the other, and if a quarter of one's time in high school is spent upon the former rather than upon the latter subjects, the best estimate of the greater gain in ability to think due to this choice of subjects is very small. It is, in fact, trifling.

(3) We have been misled because we have not recognized that good thinkers become better by the "inherent tendency of the good to gain more than the poor from any study." For example, Greek and Latin seemed to produce good thinking because good thinkers studied it; good thinkers now study physics and mathematics, hence we conclude that these subjects produce good thinking. If good thinkers were to begin the study of physical education or dramatic art, we would conclude that these subjects produce good thinking.

*Theory of transfer not invalidated by recent investigations.* When investigators report such diametrically opposite

<sup>7</sup> Thorndike, E. L. *Jour. Educ. Psych.* (1924), 15: 1-22; 83-98.

results with respect to the transfer values of the different school activities, only the attitude of open-mindedness is safe. Experimentation will sometime resolve the contradiction. Meanwhile, one may ask whether or not the theory of transfer outlined above is invalidated. The reply is in the negative. The theory has been derived from numerous experimental attacks upon the problem of transfer, and it accords with conclusions drawn in investigations to determine transfer values of specific school subjects, including a number sponsored by the committee in charge of the Classical Investigation. Some of these will be referred to later.

Granted, then, that the theory is usable to explain the way in which improved efficiency occurs, a very practical problem confronts the student of secondary education, namely, What will be the effect of the theory upon the curriculum?

**Effect of the new theory of transfer upon the curriculum.** The present theory of transfer necessitates a thorough revision of many of the subjects, especially as the aims and methods were formulated for them by the Committee of Ten. A subject or course whose values are primarily formal cannot, consistently, be required of all pupils. Such a subject must either give way to another whose place is determined in the first instance by the value of its content, or be revised in such a manner as to be itself of intrinsic worth. It is not advocated that indirect values should be neglected. It is advocated, however, that content values should determine prescribed subjects, and to a large degree even those which are elective. Each school activity should be so organized and taught as to insure, as far as possible, desirable mental habits and worthy ideals.

Much has been done in revising the materials of instruction along these lines, and at present further reorganization is going forward rapidly. Algebra and geometry are losing their foothold as required subjects, general science has

almost entirely replaced physical geography, grammar is being taught as an aid to correct oral and written speech rather than as a mental discipline, teachers of English are advocating more extensive reading of literature suitable to the ages of secondary-school students in place of detailed analyses of a few masterpieces, the rigid and logical organization of the sciences is giving way to a more psychological arrangement, and plays and games are replacing formal gymnastics in the program of physical education. Any teacher will be benefited by examining his courses of study and methods in the light of the theory of transfer of training.

A number of educational writers have expressed the view that a revision of the subjects of instruction may be carried out too rapidly. The old subjects possess an organization and a body of teaching methods which are the result of years — in some instances centuries — of teaching. These the newer subjects lack, sometimes to a marked degree. The first textbooks which appear for new courses often show very poor organization, and the judgment of their authors, as manifested in the selection of subject-matter, is sometimes wrong. Instruction suffers as a consequence. Certainly no one will object to the statement that readjustment should proceed slowly and with due regard for these difficulties.

**Effect of the new theory of transfer upon methods of teaching.** It has already been remarked that each subject should be so taught as to insure the greatest amount of transfer. It may well be repeated, also, that upon the teacher rests the chief responsibility for the indirect values received from his courses. Hence it behooves the secondary-school teacher not only to understand the theory of transfer, but to organize and present his subjects in the most effective way.

*Clear-cut aims essential.* The first prerequisite is a clear-cut conception of the aims and objectives, toward the realization of which class work contributes. Upon this will rest

the organization of courses. Too often aims are mere statements, barren of influence. Too often, also, the teacher is content to follow the outline provided in the manual, covering the ground chapter by chapter or page by page. Under such a system of procedure the most ardent advocate of even the old doctrine of formal discipline would expect little. It cannot be too strongly emphasized that what a teacher expects to do will have an exceedingly great influence upon what he really accomplishes.

If the channels of transfer are identical elements of substance, method, and ideal, precautions must be taken to see that the course includes elements which will be found in out-of-school situations. The facts learned and the principles developed must be "identical" with the facts and principles encountered in daily work, in the duties of the home, or in social intercourse. Scrutiny of the course from this point of view will result in the elimination of material of little or no recognized social value, the rearrangement of certain topics, and the addition of others. Likewise, a degree of certainty and decision heretofore lacking with respect to the mental habits and ideals to be developed is demanded if these are to be influential in shaping instruction. Such an attitude will be of the greatest assistance in definitizing and vitalizing the instructor's daily work, for there can be no contradiction between the organization of a subject from the standpoint of identical elements and its arrangement on the basis of social values.

*Pupils to understand purpose of work they do.* In order to insure maximum transfer, the teacher must not only have his immediate and ultimate aims of instruction clearly formulated, but he must see to it that his pupils share his views on the objectives to be gained. Many teachers never discuss with their pupils the reasons for which assigned work is given, or say anything of the purposes or ends of their

courses. The members of their classes are thus left to grope blindly for the meaning of it all, their feelings being but slightly relieved by the general statements which they hear to the effect that they are "training their minds," or that they should "take advantage of their wonderful opportunities to prepare for life."

Experimental investigations support the statement that the student must generalize and apply his principles and methods of procedure if the maximum of transfer is to be received. In one investigation, pupils were required to hand in neat arithmetic papers. This point was stressed in the class, but nothing was said about neatness in their other work. There was a marked improvement in arithmetic papers, but none in language or spelling papers. A similar investigation was conducted in another school, with the exception that the teachers were instructed to talk frequently with the class on the importance of neatness in dress, business, the home, hospitals, etc., connecting the discussions as far as possible with the subject under experiment. The results showed that, when neatness was made a conscious ideal or aim in connection with one school subject, the results were carried over to other subjects.<sup>8</sup> Other experiments show that it is desirable in training children formally to bring to their attention the importance of the training, and that practice with knowledge of the purpose of the practice has a value in the transfer of training which practice without knowledge does not possess.

#### EDUCATIONAL AIMS AND THE SELECTION OF SUBJECT-MATTER

**The function of general aims.** Due to changing social conditions, immediate aims are liable to modification from one pupil generation to another. Similarly, the social en-

<sup>8</sup> Ruediger, W. C. *The Principles of Education* (1910), pp. 108-10.



vironment under which a given fact is met may vary. Although it is true that now one, now another may be stressed from time to time, ultimate aims are much more constant. The broad fields of human endeavor, marked off by general or ultimate aims, remain relatively the same from generation to generation. This relatively fixed general statement of aims and objectives is of paramount importance in selecting materials of instruction. The teacher may use it as a criterion of judging the worth of materials of instruction, and the administrator may use it as a balance wheel in coordinating the diverse activities of the total program of studies. It also serves as a guidepost to the investigator in his search for desirable materials of instruction.

**A detailed analysis of aims necessary.** To aim in instruction at social efficiency in general, or even at one of the more definite objectives (as command of the fundamental processes), is to shoot blunderbuss fashion. The objectives of secondary education must be subdivided and analyzed in detail before they can exert the influence they must exert either in curriculum building or in teaching. Under fundamental processes, for example, must be clearly shown the more general divisions, such as oral, written, and graphic expression, mathematical and reading ability, scientific concepts, and the like, which go to make up the general heading. These in turn must be further subdivided into specific facts, principles, habits, powers, interests, attitudes, and ideals. Complete analysis will furnish the curriculum-builder the material for his course of study, and the teacher with objectives for daily lessons.

Perhaps there is no place where clear thinking is more needed than in the matter of immediate educational aims. Those engaged in the work of instruction are able as a rule to explain readily the general purpose of this or that subject. However, the gap between the theoretical explanation and



FIGURE 13. EDUCATIONAL AIMS AND OBJECTIVES

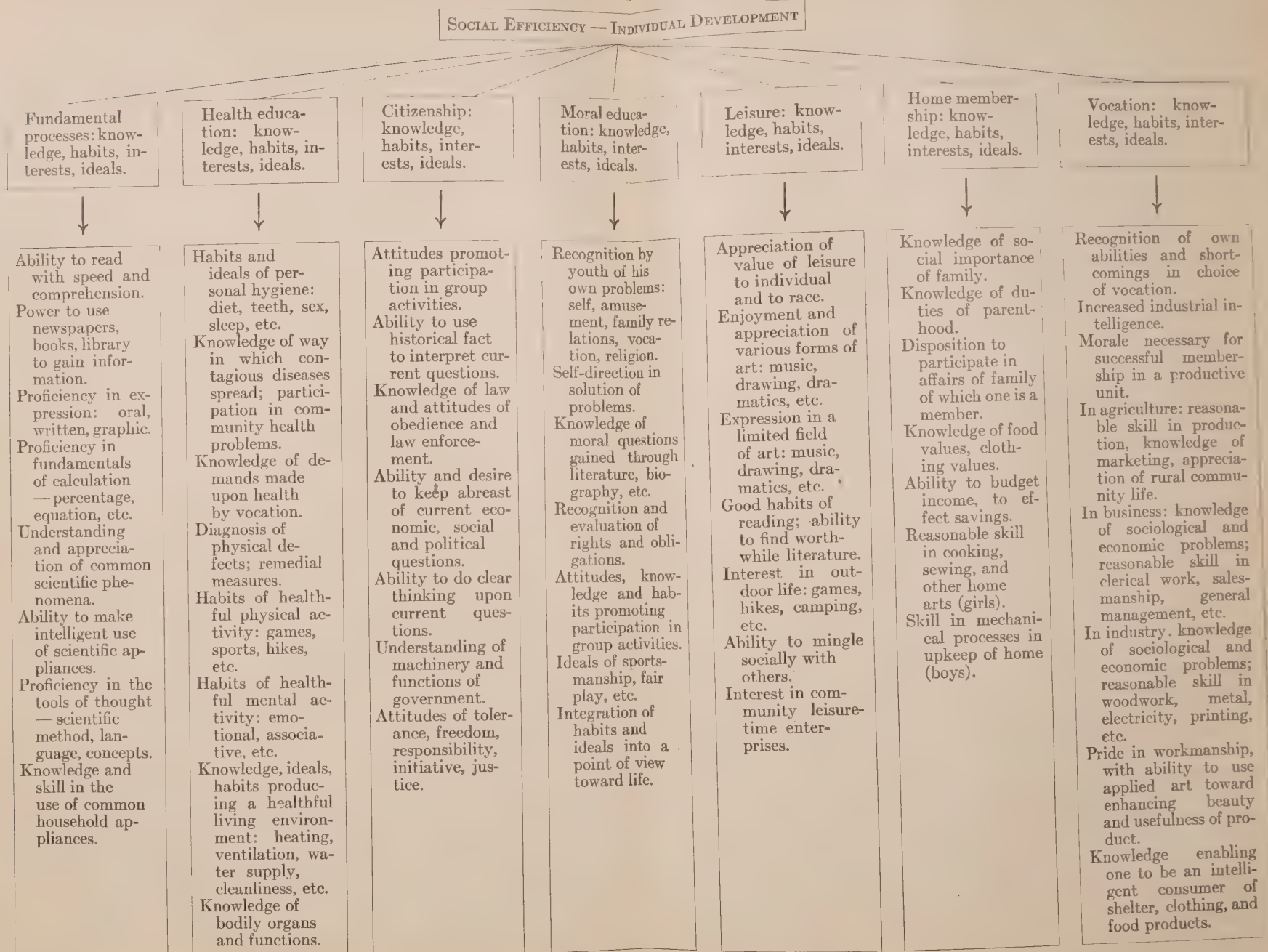
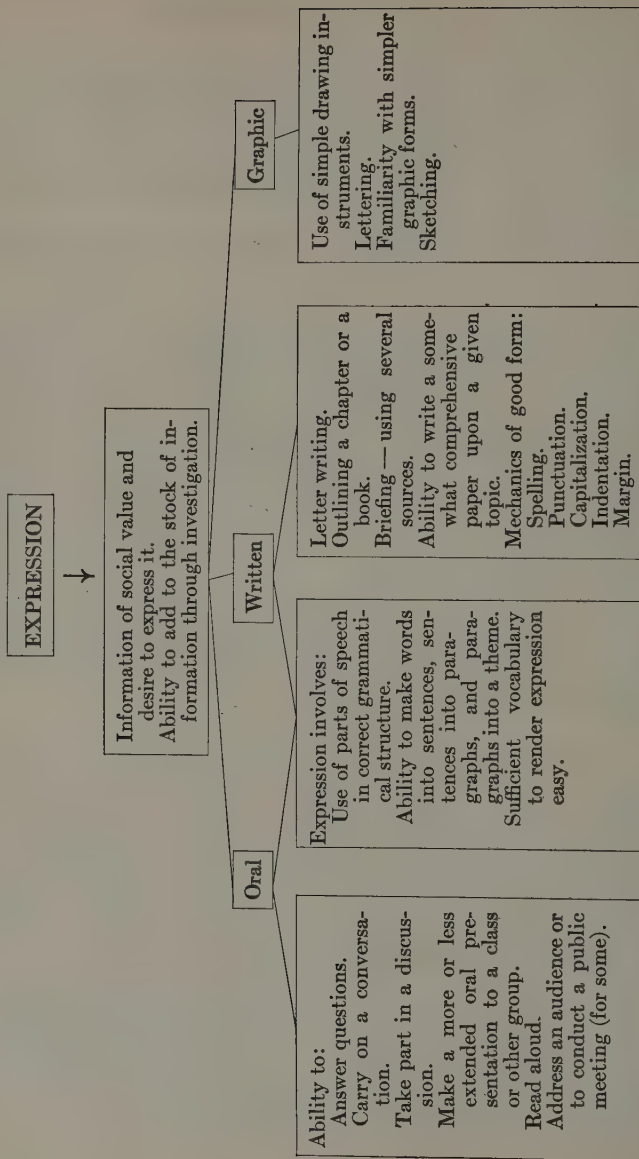


FIGURE 14. ORAL, WRITTEN AND GRAPHIC EXPRESSION



habits and skills. Similarly, the subdivisions of each of the several aims are more fluid than is apparent at first glance. For example, "attitudes promoting participation in group activities" constitute an important aim in citizenship teaching; they are also vital to the development of moral education. Figure 14 presents a detailed analysis of one of the fundamental processes (expression) to show the type of thinking that must be done before aims and objectives exert the influence they should upon the selection of subject-matter.

#### METHODS OF SELECTING AND VALIDATING SUBJECT-MATTER

Old methods are being refined and new techniques developed. The oldest and as yet perhaps the most common method for selecting subject-matter is through the committee procedure. Persons chosen for their success in teaching, administration, or their recognized mastery of a certain field, are appointed from the ranks of the teachers in a city school system or from the membership of an educational association. Usually after a careful canvass of available information upon the problem at issue, and a scrutiny of prevailing practices, the committee holds a series of conferences where ideas are exchanged. A series of recommendations is issued. This method was employed both by the Committee of Ten and by the Commission on the Reorganization of Secondary Education. It is employed by numerous city school systems and by many educational associations.

A method of more recent usage attempts to select subject-matter through objective methods. Some aspect (or aspects) of the environment is investigated to determine the knowledge, skills, or ideals of greatest relative value, which is usually judged on the basis of frequency of use or on the basis of the habits or skills most needed to increase the general level of efficiency. Closely allied is job analysis, most

often used in connection with vocational education but now being applied elsewhere.

*The method of collective opinion.* Perhaps the best use of the committee method has been made by the National Committee on Mathematical Requirements. The original Committee of six members was enlarged to include adequate representation of secondary-school interests. It then undertook a comprehensive study of the whole problem of the improvement of mathematical education, including secondary and collegiate mathematics. The active interest and coöperation of teachers, administrators, and organizations throughout the country were secured, and a nation-wide discussion of the problems facing the Committee ensued. Two members of the original Committee (J. W. Young and J. A. Froberg) were selected to devote their whole time to the work of the Committee. Contact was established with all organizations of teachers and others interested, and nearly one hundred organizations gave active assistance. Direct contact was thus established with the classroom. Upon the completion of its work, the Committee felt that its report had the approval of the great majority of progressive teachers throughout the country.<sup>11</sup>

Similar to the committee procedure, and classifiable as methods of securing collective opinion in selecting and evaluating subject-matter, are the following:

(1) A number of judges are secured who rate the worth of a series of topics. The judges are selected because of their mastery in a field, while the topics are arranged sometimes by one person, sometimes by a committee.

(2) Textbooks are compared to determine the stress placed upon the various aspects of a subject of instruction. Importance is judged in part by the presence or absence of

<sup>11</sup> *The Reorganization of Mathematics in Secondary Education* (1922), pp. vii-ix.

treatment in some or all of the texts, and by the amount of space given the topic in question.

(3) Courses of study are compared in a manner similar to that used in an examination of textbooks.

*The survey method.* The survey has been frequently employed to determine the types of vocational education to be given by the schools in a particular community. Simply stated, the method is to determine the kinds of existing occupations and the number of persons employed in each. Usually the ages of the workers are noted, so that the jobs open to secondary pupils will be known. The method is being used with much more frequency than formerly to ascertain the use made of definite types of subject-matter found in the usual courses of study. Such investigations have been made, for example, to find out the arithmetical processes used in the average home, the manual arts processes needed to make home repairs, etc.

In the typical survey such sources as census statistics and descriptive literature of all sorts are used, but first-hand study of actual conditions usually follows. Special techniques, somewhat of the nature of the survey but involving special procedure, have been elaborated.

(1) One of these has been developed in connection with spelling. Business correspondence is examined, a list is made of the words used, and the number of times each word is used is noted. The complete list is then used in commercial work. Numerous investigations of a similar nature have been made, so that many spelling-books are available whose lists of words are selected on the basis of use. The method has also been employed in vocabulary investigations.

(2) In deriving content for the social studies and for general science particularly, investigators have employed the "newspaper-magazine" method. A number of issues of one or more newspapers or magazines are examined for the



space devoted to science. The "stories" are read, the scientific principles occurring in them noted, and a final table is drawn up to show the scientific principles in daily use. Importance is judged by frequency of mention and by amount of space.

(3) Similarly, articles appearing in an encyclopædia, the books of "pioneer thinkers," or the platforms of the major political parties are studied and compared to determine those processes, topics, or questions of the greatest present, or the greatest probable future, use.

*Job analysis.* If a girl expects to become a stenographer and is enrolled in a commercial curriculum, her training can be made much more effective when it is known as precisely as possible what it is she will be called upon to do. Therefore a study of a number of positions of the type she expects to enter should be made and the various processes tabulated and analyzed. These can be included in the preparatory training. In very simple terms, this is the method of job analysis, and it has been applied to a large number of the vocations, including the professions. There are reasons to believe that the near future will see the application of the job analysis method to the various activities and groups of activities which comprise the business of living.

The various processes which when combined make up a list of the knowledges, skills and duties a worker must have at his command are arrived at by observing successful workmen, by asking them to make a list or to keep a diary of their duties, and by determining the difficulties they encounter. If the list of difficulties is extended to include mistakes, a very profitable point of attack for improvement is encountered. A course of study built upon the mistakes made in oral and written discourse or a list of spelling words made up from errors in spelling, illustrate the use which may be made of the method.



**An evaluation of the methods of determining curriculum content.** None of the methods just described is entirely independent of the others. Moreover, each has its merits and its faults. Against the method which determines subject-matter by collective opinion may be urged the objection that mistakes will be made in the judgments. It is with difficulty that one escapes the bias of his specialty; he may be ignorant of certain facts and conditions which would influence his opinions, and he may give snap judgments. In favor of the method of collective opinion it may be asserted that judges or the committee may use all the information, objectively derived and otherwise, which contributes to the problem at hand. A more complete, and hence a more usable, series of recommendations can be made.

The greatest objection to the survey method, at least as based on frequency of occurrence, is that a curriculum derived by such methods cannot look into the future far enough to insure progressive improvement. It will tend to fix things as they are. This is countered by the assertion that all social progress has come about through a process of self-levitation.<sup>12</sup> The survey method has certainly made us realize better the concrete needs of the various social groups, and has helped greatly in isolating educational objectives. In the actual revision of courses, the practical teacher or administrator will probably find it advisable to use as many of the available results as possible. He will probably conclude that there is a place for all of the above methods in the selecting of subject-matter, and will likely find that familiarity with the technique and with the strong and weak points of the different investigational procedures will serve to balance his judgment. Unless his experience is different from that of others, he is likely to discover, also, that revision is best brought about through progressive improvement of existing courses.

<sup>12</sup> Peters, C. C. *Foundations of Educational Sociology* (1924), chap. 18,

**Continuous revision necessary.** A change in educational objectives always precedes changes in educational practice, and new subject-matter is universally recognized as desirable long before it is incorporated in the curriculum. It has been estimated that aims precede curriculum change by at least ten years, and that for a general change from ten to twenty years is needed. Tardiness is caused by the weight of tradition, and by the time it takes for investigation and for general dispersion of the results of investigation. Since social changes do not wait, certain curricular processes have a shorter life of usefulness than would be the case if the process of adjustment were not so slow.

There is more active investigation of curriculum content now taking place in this country than at any period of our history. Many cities have bureaus of educational research whose first duties are usually measurement of the results of teaching. Analysis of the results of teaching has stimulated an examination of the aims, content, and arrangement of curricular materials. The total results of the measurement movement have been most beneficial to curriculum-building.

Committees appointed from the teachers of individual school systems or from the membership of educational associations are also concerned with curriculum problems. They work by the round table method rather than by experimental procedure. Their final report is usually made only after a careful canvass of local practices and of practices in other communities. The chief value of their work is adaptation of school practice to local needs, and a changed attitude on the part of committee workers toward new materials. It is possible for administrative officers to work out an excellent course in general science, for example, for the ninth grades in a city having junior high schools and four-year high schools and to give directions that the course be followed. The attitude of the teachers is markedly dif-

ferent when the course is a result of their own efforts. Half-hearted compliance, often not unmixed with negligence or even opposition, is replaced by active effort and enthusiasm.

Besides bureaus of educational research and committees, subsidized and independent investigators are producing worthy results. The volume of literature is more than a single individual or even a committee, working under ordinary circumstances, can use. There is great need for a central agency to assemble this material, summarize it, and make it available in usable form for the general educational public. The ideal arrangement would be to provide a central agency or agencies, state or national or both, whose function it would be to assemble the results of committees, and to supplement it by the results of objective studies of curriculum material. These central agencies should have at their disposal school laboratories where educational psychologists and expert teachers can coöperate in the final arrangement of teaching materials.

### TOPICS FOR DISCUSSION AND INVESTIGATION

1. Illustrate, from the subject you expect to teach or have taught, the various channels of transfer. Show how the identical elements are the result of the process of generalization.
2. How do you account for the contradiction between Thorndike's conclusions and those of the committee of the American Classical League? What is your own conclusion in the matter?
3. Outline a plan which a teacher should follow if he is to make his teaching transfer to other classes. To out-of-school situations.
4. Can we, by analyzing the total environment, formulate educational aims without reference to the history of education?
5. Does the project constitute a *new* method in teaching?
6. Trace historically the movement to revise the curriculum.
7. Critically examine the methods used in curriculum-making by Bobbitt, Charters, Snedden, and others.
8. What is the relation between educational ends and educational method?
9. Is it possible to separate and arrange the materials of a course of study under such captions as: (1) facts; (2) principles; (3) habits; (4) powers; (5) ideals, etc.?

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## CHAPTER XIV

### THE FUNDAMENTAL PROCESSES

**Introduction.** As an educational aim "mastery of the fundamental processes" is not coördinate with citizenship, worthy home membership, health, vocational efficiency, worthy use of leisure or moral character. As the term is commonly used, "fundamental processes" refers to those tools and instruments which the individual must have to gain one or all of the educational ends. While it is not absolutely impossible to discharge the duties of citizenship or to maintain economic independence without the ability to read, the average man clearly will do better in both respects if he has such ability. Similarly, he will better maintain his own health, and he will be able to participate more effectively in the solution of health problems if he is possessed of some of the fundamentals of science.

It has always been one of the chief purposes of the schools to give, so far as possible, a command of the fundamental processes. To date the time at the disposal of the elementary school has not proved sufficient for an adequate mastery of them. Continued attention must, therefore, be given to them throughout a part or all of the secondary period. In a concrete description of the work the secondary school is attempting to do, it thus becomes necessary to consider those activities which have as their purpose the mastery of the fundamental processes.

This chapter is comprised of five sections. The first, entitled "the tools of learning," centers upon reading and related problems. The second section is concerned with expression. Graphic as well as the conventional oral and

written expression is included. The contribution foreign language study makes to English expression naturally finds a place in the problem of training the powers of oral and written discourse. Following this is a treatment of the fundamentals of computation, wherein is attempted the task of showing what the mathematical processes needed by the average citizen are, how they are derived, and how courses in secondary mathematics are arranged. The next division of the chapter undertakes to do practically the same thing for the subject of science. The chapter closes with a brief examination of the contribution the school makes towards furthering the development of fundamental methods of thought.

#### THE TOOLS OF LEARNING

**Ability to read silently.** The practice of stressing oral reading originated when methods of communication were not through newspapers, books, and magazines, but by word of mouth. With the change, improvement, and spread of methods of communication has come a change in needed training. The average citizen gains much of his information on any and all matters through silent reading; Gray shows, for example, that reading is an indispensable means of "familiarizing adults with current events, with significant social issues, with community and national problems, and with American institutions, ideals, and aspirations."<sup>1</sup> Moreover, the student finds that practically all of his lessons require book work. Although students and teachers may not realize it, the fact remains that much poor scholarship and failure are traceable to poor reading ability.

The amount of reading one is required to do has increased enormously. Newspapers and magazines have increased, since 1880, five times as rapidly as has the population of the

<sup>1</sup> Gray, W. S. *Elem. Sch. Jour.* (1924), 24:348-56.



country.<sup>2</sup> The average citizen reads a daily newspaper, periodicals are issued sometimes by the million, and free libraries circulate their books through almost every corner of the land. One finds it necessary to select reading material from the mass available; he also finds it is necessary to do much rapid, silent reading.

We now recognize two classes of silent reading. One of these may be called cursory, where a great deal of ground is covered and where it is necessary to arrive quickly at the essentials; the other class, careful reading or study, where it is necessary to assimilate the complete thought of the book. The first class is demanded of the pupil in reference reading and in much of the reading done in literature classes; the second in preparing an ordinary textbook lesson, where principles must be retained and the thought of the text expanded by reading between the lines, furnishing original examples of principles, etc.

Expert investigators are in general accord in saying that speed in silent reading may be increased through practice, without loss in comprehension. Many tests and scales are available for measuring both speed and comprehension. A majority of these have several forms, so that improvement may also be measured. The vast amount of experimentation given to reading has resulted in a discovery of means for diagnosing pupils' shortcomings and difficulties, and a definite program for improving reading ability. This program is initiated and carried on as far as possible in the elementary grades; it should be continued in the secondary school, however, for reading ability is one which permits almost indefinite improvement. The distinguishing characteristics of the junior- and senior-high-school grades are shown in the following quotation:<sup>3</sup>

<sup>2</sup> Judd, C. H. *Elem. Sch. Jour.* (1922), 23:253-66.

<sup>3</sup> *Twenty-Fourth Yearbook* (1925), part 1, pp. 64-65.

By the time pupils enter the seventh grade, a large majority of them approach maturity in the fundamental habits of both oral and silent reading. They have made notable progress in habits of intelligent interpretation and in reading effectively for different purposes. They have acquired strong motives for reading, and they have developed numerous habits and skills which are essential in the effective use of books, libraries, and sources of information. By virtue of such accomplishments, seventh-grade pupils enter a period in which specific reading attitudes, habits, and tastes should be rapidly refined and perfected. The ultimate goal is to secure independence and efficiency in all school and life activities that involve reading.

A second distinguishing characteristic of the period is emphasis on conscious learning. In the primary grades, growth in ability to read begins by unconscious imitation of the teacher and by following her directions. In the fourth, fifth, and sixth grades, the habits thus imitated are further developed through wise direction and supervision. In the junior and senior high schools, skilful direction is continued and supplemented by simple explanations of reading processes, deliberate study by the pupils of their own habits, and further extensive practice to secure improvement. A reasonable survey may now be undertaken with the pupils of the causes for, and the nature of, those habits and skills that make pupils proficient in various reading activities.

*Vocabulary.* If the student does not understand the meanings of the words he reads, it is evident that he cannot comprehend the thought they are intended to convey. That the pupil comes into contact with new words, technical and non-technical in character, with almost every lesson, and that he is prone to pass over these words without becoming acquainted with their meanings, are facts of which every teacher is aware. Even so, the pupil's ignorance is often concealed from the teacher, who credits the pupil with the knowledge he should have rather than with the knowledge he does have when mere words are repeated in answer to a question. A vocabulary is a *sine qua non* of effective reading, and the habit of enlarging the vocabulary is one of the most important study habits.

There are standardized scales, which show with considerable accuracy the number of words in the vocabulary. Again, there is the device, familiar to every teacher, of testing the pupils on the meanings of a list of words taken from the lesson. The latter method will not, of course, indicate how extensive the vocabulary is, but it will show whether or not the pupil possesses a relatively good, mediocre, or poor vocabulary; it will show something about the presence or absence of the habit of looking up the meanings of new words; and it will allow the teacher to make a rough ranking of his pupils as to ability to use words.

**Use of library, and expanded library facilities.** The large amount of printed matter dealing with practically every field of knowledge makes training in the technique of using books necessary. This need is reënforced by the growing tendency of teachers to break away from the single textbook and to make extended use of supplementary, interesting reference material. Specifically, the habits and skills needed in the use of books are:

(1) In the use of books and sources of information

Keeping books clean and neat

Opening books and turning pages carefully

Skillful use of preface, index, table of contents, chapter and paragraph headings, keys, tables, graphs, glossary, appendix

Effective use of dictionary

in finding words

in deriving pronunciations

in selecting meanings

Effective uses of sources of information in finding references quickly

(2) In the use of libraries

Effective use of library privileges and aids, including card files, bound volumes of periodicals, readers' guides, bibliographies

Technique of withdrawing and returning books <sup>4</sup>

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<sup>4</sup> *Twenty-Fourth Yearbook* (1925), part 1, p. 16.

Many schools are setting aside a definite period for instruction in the use of the library. The advisability of this procedure is very questionable, for general observation indicates that such instruction is likely to be ineffective. An individual learns to use the library when he has use for it. Much library training may therefore be given incidentally. Teachers can give instructions as to how and where to find books when they make their supplemental assignments, and librarians can supplement these instructions. On the other hand, the practice of including in the pupil's schedule the library period, which may be used for reference work or for reading for pleasure, has much to commend it.

#### ORAL, WRITTEN, AND GRAPHIC EXPRESSION

**Aims in oral and written expression.** The abilities which secondary-school pupils should acquire in oral and written expression are well stated by the joint committee on English, representing the Commission on the Reorganization of Secondary Education and the National Council of Teachers of English, as follows: <sup>5</sup>

Expression in speech includes:

- (a) Ability to answer clearly, briefly, and exactly a question on which one has the necessary information.
- (b) Ability to collect and organize material for oral discourse on subjects of common interest.
- (c) Ability to present with dignity and effectiveness to a class, club, or other group material already organized.
- (d) Ability to join in an informal discussion, contributing one's share of information or opinion, without wandering from the point and without discourtesy to others.
- (e) For those who have, or hope to develop, qualities of leadership, ability, after suitable preparation and practice, to address an audience or conduct a public meeting with proper dignity and formality, but without stiffness or embarrassment.

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<sup>5</sup> *Bur. of Educ. Bull.* (1917), no. 2, pp. 30-31.

- (f) Ability to read aloud in such a way as to convey to the hearers the writer's thought and spirit and to interest them in the matter presented.

All expression in speech demands distinct and natural articulation, correct pronunciation, the exercise of a sense for correct and idiomatic speech, and the use of an agreeable and well-managed voice. The speaker should be animated by a sincere desire to stir up some interest, idea, or feeling in his hearers.

Expression in writing includes:

- (a) Ability to write a courteous letter according to the forms in general use and of the degree of formality or informality appropriate to the occasion.
- (b) Ability to compose on the first draft a clear and readable paragraph, or series of paragraphs, on familiar subject matter, with due observance of unity and order and with some specific detail.
- (c) Ability to analyze and present in outline form the gist of a lecture or piece of literature and to write an expansion of such an outline.
- (d) Ability, with due time for study and preparation, to plan and work out a clear, well-ordered, and interesting report of some length upon one's special interests — literary, scientific, commercial, or what not.
- (e) For those who have literary tastes or ambitions, ability to write a short story, or other bit of imaginative composition, with some vigor and personality of style and in proper form to be submitted for publication, and to arrange suitable stories in form for dramatic presentation.

*Motivation necessary in expression.* In expression three things are fundamental: first, there must be something to express; second, a real opportunity for expression must be provided; and third, expression must be guided.

In providing content for expression, imagination does not mean manipulation of impossible material, but a constructive process based upon the elements of actual experience. Subjects for written and spoken English are therefore best selected from the vocational activities of pupils; from their dramatic, athletic, or other school interests; from the read-

ing of wholesome books and magazines; or from any other interest. There is much duplication and working at cross purposes between composition and other classes. A possible remedy for the situation is to assign to composition the task of teaching correct form, leaving it to other sources to supply content. Under this plan a pupil could, for example, write a paper on "Engineering as a Career" for his class in vocational civics and hand that paper to both his civics teacher and his composition teacher. Content would be the problem in one class; expression in the other. Composition teachers would be relieved of one of their greatest problems — that of suggesting theme subjects; their teaching should be more effective, since it is general improvement in expression that is desired, not improvement in English classes only. The first of the three fundamentals in expression would be at least partially met.

Youth should realize that convention demands correct speech, and such realization should stimulate the tendency to correct oral and written usage. Young people are, however, most susceptible to the approval of their own social group. They adopt the practices of their peers in expression as well as in other things. In improving expression, there is need for an audience situation, where the student has something worth while for his listeners or readers. If use is made of the classroom or auditorium, or if expression is vitalized through the school paper or in some other way, opportunity for expression will be more ideal. As a matter of fact, such methods of providing real opportunity for expression are rapidly coming into common usage.

*The mechanics of English.* Guidance in expression consists of emphasis skillfully placed upon the mechanics of oral and written expression as the occasion arises. This means that penmanship, spelling, and grammar will for the most part be taught incidentally. We have finally learned that



detached drill in these subjects does not necessarily result in better penmanship, more accurate spelling, or faultless grammar. Since it is general improvement that is wanted — not ability to spell words out of context, nor to submit a specimen of handwriting, nor to recite grammatical rules — it is better to teach these aspects of English in the situations in which they are used. First of all, a pupil should spell correctly the words he uses in his writing vocabulary, his penmanship should be reasonably good under any and all circumstances, and his oral or written sentences should be free from grammatical error and reasonably clear and coherent. A second reason for incidental teaching of the mechanics of English springs from the pressure for time. If English is to consume from a fourth to a third of the school day, other subjects will suffer. It becomes a question of relative values. Important as English is, it cannot be permitted to monopolize the program of studies. Guidance in expression, not separate classes for each of the aspects of expression, seems to be the desirable policy.

*Errors common to oral and written speech.* If correct usage is the goal in oral and written speech, the starting-point of improvement lies in detecting and eradicating error. Charters<sup>6</sup> and others have made extensive investigations of errors common to language and grammar, and have worked out, for the elementary grades, a course of study based upon these errors. A similar investigation has been made of errors found in written composition of limited numbers of ninth-grade students and college freshmen. The results of the two lines of research are not dissimilar. Elementary children err most frequently in making a verb agree with its subject in number and person, in their use of past tense and past participle, and in form of the verb. They also use

<sup>6</sup> For a summary of objective studies made to 1923, see Charters, W. W., *Curriculum Construction* (1923), chaps. 16, 17.

many double negatives and much syntactical redundancy. Although frequent, their errors are simple in nature and involve little technical grammar. Secondary pupils are apparently weak in their use of pronouns and verbs, they use poor sentence structure, and make many mistakes in the mechanics of English (Table 37).

TABLE 37. (1) NUMBER OF ERRORS, (2) PROPORTIONAL RANKING, (3) ERRORS PER TEN THOUSAND WORDS IN THEMES OF NINTH-GRADE STUDENTS AND COLLEGE FRESHMEN <sup>7</sup>

CLASS No.	MISTAKES	NINTH-GRADE ERRORS			COLLEGE ERRORS		
		1	2	3	1	2	3
I	Case of pronouns.....	11	14	2	2	14	1
II	Others in pronouns.....	102	7	20	40	6	13
III	Verbs.....	93	8	18	32	7	11
IV	Adjectives and adverbs.....	52	10	10	28	9	9
V	Prepositions and conjunctions.....	50	11	10	24	10	8
VI	Sentence structure.....	220	4	44	32	8	11
VII	Clearness of meaning.....	46	12	9	17	12	6
VIII	Punctuation.....	232	2	27	100	3	33
IX	Apostrophe.....	150	6	30	75	5	25
X	Capitalization.....	196	5	39	120	2	40
XI	Careless omission or repetition.....	223	3	45	77	4	26
XII	Spelling.....	675	1	135	208	1	69
XIII	Quotation marks.....	25	18	5	9	13	3
XIV	Miscellaneous.....	85	9	17	23	11	8
	Totals.....	2160		43	787		24

Similarly, spelling lists have been compiled from personal and business letters, and from themes and written work of high-school students. The paragraph below shows the words misspelled ten or more times in the written work of the students in a small high school. The words are arranged in order of greatest frequency of misspelling:

Parliament, too, until, quantity, their, vassal, there, government, separate, finally, they, straight, didn't, water, Bibles, council, growth, iodine, coming, lose, isosceles, disappointed, perpendicular, qualities, Delaware, to, and, Christians.<sup>8</sup>

<sup>7</sup> Johnson, R. I. *Sch. Rev.* (1917), 25 : 555-80.

<sup>8</sup> Investigation made by A. G. Capps, and reported by Charters, W. W., *ibid.*, p. 192.

**Proposed separation of literature and composition.** In the past there has been too much composition based upon literature. The result has been non-productive composition, for when this subject is aligned with literature it is often neglected and scant attention given to its practical aspects. Again, entirely different aims dominate these two subjects; consequently entirely different technical skills are required in teaching them. There seems to be no good reason for grouping expression and literature under "English"; on the contrary, it seems likely that better results would follow a separation. Such separation has been proposed many times, but as yet is infrequently found in practice.

**Foreign language and improvement in English.** Since English is derived largely from Latin, the study of Latin should contribute toward proficiency in English. Chief among the claims of Latin adherents for indirect values to English is enlargement and refinement of vocabulary. Somewhat less pronounced is the assertion that ability in English grammar and composition will likewise be improved through Latin study. Parallel statements are made for the modern foreign languages, although they are usually regarded as being inferior to Latin in producing general improvement in English. This is because the relationship between them and English is not so close, and because the purpose of teaching a modern foreign language is usually to give ability to read, write, and speak the language.

Older studies show that foreign language study produces improvement in English grammar, greater fluency of words in writing, and more rapid perception of words in reading.<sup>9</sup> The whole question of the indirect values of Latin has been reopened within the last few years. For the most part, in-

<sup>9</sup> Starch, D. *Educational Psychology* (1919). Summaries of studies, pp. 225-47.

vestigations centered around the extensive one carried on by the American Classical League. This body, with the support of the General Education Board, has undertaken to determine how far the objectives commonly claimed for Latin are attained, and what content and methods produce the most favorable results.

*Vocabulary.* All investigators report increased power in vocabulary on the part of students pursuing Latin. The weight of evidence shows that a steady increase in ability to define words accompanies Latin study at least as far as the first year of college. It appears that, when definite instruction and training in the technique of derivations is given, transfer to the field of English vocabulary is greater.<sup>10</sup>

*Composition.* Otis, in a study of a small group of Latin pupils and an equal number of commercial pupils of the same intelligence and scholastic standing, found Latin pupils slightly superior in composition. Miller and Briggs, on the other hand, studying the translations of third-year pupils in different schools, came to the conclusion that the translations are likely to do far more harm than good to English. Although presented after assignment and preparation, the translations abounded with errors. Subject and predicate disagreements, wrong case of pronouns, and confusion of adjectives and adverbs were typical mistakes. About three out of four attempts at rendering Cicero either conveyed no meaning or were so poorly expressed as to do more harm than good to English expression. Miller and Briggs expressed the belief that Cicero can be so taught as to make a marked contribution to the appreciation of good English,

<sup>10</sup> Carr, W. L. *Sch. and Soc.* (1921), 14:192-98; Gilliland, A. R. *Jour. Educ. Psych.* (1923), 14:174-76; Grinstead, W. J. *Educ. Rev.* (1922), 63:147-58; Thorndike, E. L. and Ruger, G. J. *Sch. and Soc.* (1923), 18:260-70; Newcomb, E. I. *Teachers Coll. Rec.* (1922), 23:412-22; Woody, C. *Univ. of Mich., Sch. of Educ. Bull.* no. 64, 1924.

and asked the friends of Latin for proposals to improve conditions.<sup>11</sup>

*Spelling.* Latin study evidently aids in spelling words of Latin origin, even when no special emphasis is placed upon word relationships. When similarities are pointed out, more rapid gains are made. Best results follow development of rules which govern the spelling of Latin derivatives.<sup>12</sup>

*Significance of teaching aims and methods.* An important factor in all experiments designed to test the efficiency of Latin instruction, and a factor hard to control or evaluate, is the method employed in teaching. A somewhat definite idea of the technique necessary to insure maximum increase in English vocabulary through Latin study appears in Haskell's investigation.<sup>13</sup> He found that conventional ninth-grade English, pursued by non-Latin pupils, increased the English vocabulary only slightly, nor was the vocabulary appreciably increased when as much as one fifth of the time was devoted to etymology. Conventional ninth-grade Latin also failed to add more than a small increment to the English vocabulary. However, when approximately a fifth of the Latin course was devoted to etymology with a conscious effort to increase the power of handling words, "a large and significant contribution to the range of English vocabulary" resulted.

<sup>11</sup> Otis, A. T. *Sch. Rev.* (1922), 30:45-50; Miller, G. R. and Briggs, T. H. *Sch. Rev.* (1923), 31:756-62.

See also Woodring, N. M. *A Study of the Quality of English in Latin Translation* (1925).

<sup>12</sup> Coxe, W. W. *Jour. Educ. Res.* (1924), 9:223-33.

<sup>13</sup> Haskell, R. I. *A Statistical Study of the Comparative Results Produced by Teaching Derivation in the Ninth-Grade Latin Classes and in the Ninth-Grade English Classes of Non-Latin Pupils in Four Philadelphia High Schools* (1923).

A thorough investigation of the aims, methods and outcomes of modern foreign language instruction was begun in 1925 under the auspices of the American Council on Education with the coöperation of the United States Bureau of Education.

**Drawing as a means of expression.** In the history of the race the first attempts at expressing thought, aside from vocal speech, gesture, or pantomime, were through drawings and rough sketches. These characters, usually arranged in series and depicting familiar objects, such as animals, trees, or weapons, represented ideas and were intended to convey meaning. They thus formed a method of communication. Similarly, a child uses drawing as a means of expressing ideas. Aside from enjoyment and appreciation, the average adult uses drawing, if at all, in the same way.

For many years, however, drawing was regarded as a fine art, much in the same way that painting was regarded. This conception dominated teaching. It is now believed that drawing can profitably be studied as a fine art only by those who have more than average talent. On the other hand, almost any one can acquire sufficient skill to make drawing a useful means of expressing his ideas about objects, and their relations to each other.

*Lapse of interest in spontaneous drawing.* Secondary pupils manifest a reluctance in using drawing to express their ideas, so prevalent is the conception that drawing should be regarded as a fine art. As a member of one of the earlier elementary grades, the young child does not manifest this reluctance. He is unaware of the points of technique and is confident of his ability. He draws things as he knows them to be, not as they are, and is usually satisfied with his efforts. As he grows older he gains in intellectuality, in observation, and in ideas of beauty faster than in power of expression. He arrives at a stage when he realizes that his efforts represent very poorly indeed the ideas or objects he tries to express or represent. Discouragement follows, and effort and initiative may cease entirely. Some are of the opinion that most children reach this stage at from twelve to fourteen years of age,<sup>14</sup> that is, during the junior-high-school period.

<sup>14</sup> Waddle, C. W. *Introduction to Child Psychology* (1918), p. 194.



*Secondary-school work in drawing should be extended.* During the junior-high-school period children should be taught drawing as a means of expression, although water-color and freehand of the conventional type should not be insisted upon. Artistic expression can probably be provided to better advantage through designing, using cut-out forms and tracings. Pupils should be taught to use the simpler drawing instruments.

Mechanical drawing is commonly found in both junior and senior high schools, usually in connection with practical and industrial arts courses for boys. Neglecting the fact that exercises are often poorly chosen, these courses are examples of drawing applied first of all to utilitarian demands, and second for artistic effect. Mechanical drawing as a secondary-school subject should cultivate the ability to express simple mechanical ideas clearly, using the accepted methods and conventions. It should likewise cultivate the ability to interpret the ideas of others as expressed in drawing. The course includes lettering, the use of very simple freehand sketches which precede the attack upon the object or plan to be drawn, and the use of simple drawing instruments. It should certainly be related to other school activities. The practice of making it subsidiary to practical and industrial arts is therefore questionable; better results would probably follow if it were treated as a part of a general course in drawing — a course which has as its objectives the cultivation of ability in drawing as a means of expression.

*Diagrammatic representation.* Current newspapers and periodicals abound with graphic representation of all sorts. Curves showing the increased cost of living or the purchasing power of the dollar over a period of years, graphs to indicate where and how the tax dollar is spent, and diagrammatic maps to show the importance of various phases of industry or the location and extent of a single industry, are examples

of graphic representation which the average reader encounters. One should be able to read and interpret them. Moreover, he should be able to express simple statistical material of his own in such a way as to attract the eye and convey meaning. Graphic representation is thus an important medium of expression, and as such deserves recognition in the curriculum.

### THE FUNDAMENTALS OF COMPUTATION

**Selection and arrangement of topics in mathematics.** The first task of mathematics teaching is to give pupils a command of principles which they will use in their daily lives. These principles are being determined by the collective opinion of experienced teachers, and by objective studies of the mathematics in actual use. Certain arithmetical processes, such as addition, subtraction, multiplication, and division, are of course used much more frequently than others; they are receiving first attention. The first year of the secondary school will thus contain the mathematics in most common usage; succeeding years, principles less and less frequently used. In the senior high school there will doubtless be specialized courses in mathematics for pupils who are studying the subject because of definite interests and definite uses to which they expect to apply mathematics. The principle of relative values may again be applied in selecting topics, with account taken of the specific purpose of each of the mathematics courses.

*Changes in arithmetic recommended by school administrators.* A questionnaire sent to about 1700 city superintendents and to every sixth county superintendent in the United States showed the consensus of opinion to be in favor of giving more emphasis to the fundamentals and of increasing the emphasis on the applications of arithmetic to the social and economic conditions of the day, such as the

saving and loaning of money, taxation, public expenditure, insurance, etc. The general results of the questionnaire are set forth in Table 38. It will be noticed that a majority of these superintendents would either eliminate entirely prac-

TABLE 38. THE PERCENTAGE OF SUPERINTENDENTS WHO FOR CERTAIN TOPICS FAVOR (1) ELIMINATION, (2) LESS ATTENTION, (3) ELIMINATION OR REDUCTION OF TIME; AND (4) MORE ATTENTION <sup>15</sup>

	1	2	3	4
Apothecaries' weight..	53	36	89	Addition.....75
Troy weight.....	42	44	86	Subtraction..... 69
Furlong.....	72	19	91	Multiplication..... 72
Rood (sq. meas.)....	20	42	62	Division..... 70
Dram.....	60	23	83	Fractions..... 65
Quarter (avoirdupois)	68	17	85	Percentage..... 50
Surveyors' tables....	47	40	87	Interest..... 39
Foreign money.....	28	57	85	Saving and Loaning..... 61
Folding paper.....	35	35	70	Banking..... 39
*Reduction.....	22	43	70	Borrowing..... 37
Long measure G.C.D.	35	40	75	Bldg. and loan assns..... 48
L.C.M.....	22	45	67	Investments..... 44
True discount.....	47	31	78	Bonds and stocks..... 20
Cube root.....	46	37	83	Taxes..... 53
Partnership.....	25	44	69	Levies..... 35
Compound proportion	52	32	84	Public expenditure..... 55
Compound and com-				Insurance..... 55
plex fractions.....	26	44	70	Profits..... 46
Cases in percentage...	20	35	55	Public utilities..... 57
Annual interest.....	41	31	72	
Longitude and time...	8	31	39	
Unreal fractions.....	74	15	89	
Alligation.....	85	9	94	
Metric system.....	20	44	64	
Progression.....	67	20	87	
Aliquot parts.....	21	32	53	

\*Reduction of more than two steps.

<sup>15</sup> Jessup, W. A. *Elem. Sch. Jour.* (1914), 14:461-76. Published also in *Proc. N.E.A.* (1914), pp. 209-22.

tically every item in the first column, or reduce the time accorded to each.

*Mathematical processes used in the average home.* In a survey of the social and business uses of arithmetic, Wilson<sup>16</sup> tabulated all arithmetic operations employed for the space of two weeks in a number of school communities of varying sizes. Altogether, 14,583 problems were collected from 4068 persons distributed among 155 specific occupations. Housekeepers comprised 49 per cent of the total number of persons reporting. The results showed that surprisingly simple arithmetic suffices for the affairs of the average adult. More than four fifths of all problems involved money, chiefly buying and selling. Labor and wages, interest, and rent and insurance were also represented in the money problems. The four fundamental processes; fractions — ninety per cent of which consisted of  $\frac{1}{2}$ ,  $\frac{3}{4}$ ,  $\frac{1}{4}$ , and  $\frac{1}{3}$ ; accounts; percentage; simple denominate numbers; and cancellation, mensuration, decimals, counting, and square root — these being found very infrequently — practically exhausted the principles used. Almost no application was found for the topics listed for elimination or less emphasis by the superintendents in Jessup's study.

On the other hand, there was evidence that more mathematics could profitably have been employed, although complicated calculations would not have been needed. Few or no attempts were made at budgeting the family income, figuring the profits in a business venture, or determining the advantages or disadvantages of buying a home as compared with renting. This indicates that more time could well be spent upon problems of higher social value.

*Mathematics used in later courses and in general reading.* Mathematics is primarily a tool, and as such finds application in other subjects, particularly the sciences. Again, the

<sup>16</sup> Wilson, G. M. *Business and Social Usages of Arithmetic* (1919).

application of mathematics to practical affairs means that the "language" is bound to creep into popular literature, so that the reader who cannot understand the terminology is handicapped in his reading.

An extensive investigation of these questions has recently been completed by Thorndike<sup>17</sup> and his co-workers, aided by a grant from the Commonwealth Fund. Without describing the technique of the experiment, it may be pointed out that, in physics, the chief value of mathematics lies in the mastery of the formula; in chemistry, in ability to form a correct proportion. According to Thorndike, it would be profitable to extend the field of application of the construction of formulas as well as their evaluation. Teachers of many subjects, including word-building, home economics, or physiography, would find it advantageous if they could utilize the graph.

The general reader, again, needs particularly an understanding of the graph and formula. Elementary algebra is not sufficient to enable one to read articles dealing with technical physics, or to understand mathematical definitions found in astronomy, chemistry, engineering, or similar articles found in such sources as the *Encyclopædia Britannica*. These presuppose an acquaintance with mathematics ordinarily gained by students who study the subject from three to five or more years. In general, "mere knowledge of the language of algebra has more utility than educators have thought, while skill in computing has less."

*Arithmetical processes emphasized in textbooks.* A comparison of four textbooks in arithmetic showed that nearly three fourths of the practical problems occurred in occupational activities. Even so, problems from occupations en-

<sup>17</sup> Thorndike, E. L. *The Psychology of Algebra* (1923), pp. 47-96. For a parallel study much less extensive in scope, see Williams, L. W. *Sch. Sci. and Math.* (1921), 21:654-65.

gaging approximately half of the total working population were lacking, so that, if the texts were representative, there seems to be a decided limitation of arithmetic as a vocational subject. The authors of the texts were far from agreement on the type problems. The number common to all the text books was roughly a third of the number occurring in all.<sup>18</sup>

A possible inference from this investigation is that really important arithmetical processes are much less numerous than the number found in the average text; a conclusion needing no qualification is that the judgment of a textbook writer is quite likely to be erroneous. To locate problems of utilitarian value, recourse must be had to investigation.

**Aims in mathematics.** There should be no disposition to limit mathematical training to the barest usage found in daily life. It seems entirely reasonable to expect that the average citizen could profitably make more extended use of mathematics, and an important purpose of instruction should lie in this direction. It may be that the future will bring a need for more mathematical training. For example, Bobbitt is of the opinion that social and vocational conditions of the coming generation will require every one to be more mathematically minded than at present; in other words, the age upon which we are now entering necessitates accurate quantitative thinking in the field of one's vocation.<sup>19</sup> Cajori asserts that a pupil permitted to graduate from high school with no mathematics runs the risk of remaining in a blind alley. He asserts further that no high-school subject, except English, makes as frequent and as general contact with practical life as does elementary mathematics. He admits that this proposition cannot be proved

<sup>18</sup> Monroe, W. S. *Sixteenth Yearbook* (1917), part 1, pp. 111-27.

<sup>19</sup> Bobbitt, J. F. *What the Schools Teach and Might Teach* (1915), pp. 46-47.



with mathematical rigor; it is a statistical question for which precise data are wanting.<sup>20</sup>

The question of vital concern to the teacher or curriculum maker is, what mathematical principles and operations, aside from those in actual use, should be included in courses?

*Direct values.* The National Committee on Mathematical Requirements<sup>21</sup> lists the following "practical" aims:

1. The fundamental processes of arithmetic, these to be carried considerably further than indicated by current usage.
2. An understanding of the language of algebra, and a study of the fundamental laws of algebra. This includes the formula, equation, simple graphic representations, the fundamental operations, simple factoring, etc.
3. Familiarity with geometric forms common to nature, industry, and life; and development of space perception and spatial imagination. This includes computation, measurements, and constructions with simple instruments; and appreciation of geometric forms in nature, architecture, manufacture, and industry.
4. An introduction to the elementary notions of trigonometry and the demonstration of a limited number of propositions in geometry, the purpose being to show what "demonstration" means.

*Indirect values.* The Committee also formulates disciplinary and cultural aims, as follows:

1. "The acquisition, in precise form, of those ideas or concepts in terms of which the quantitative thinking of the world is done."
2. "The development of ability to think clearly in terms of such ideas and concepts."
3. "The acquisition of mental habits and attitudes which will make the above training effective in the life of the individual."
4. Training in functional thinking, that is, thinking in terms of and about relationships. This aim is greatly stressed. Func-

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<sup>20</sup> Cajori, F. *Sch. Sci. and Math.* (1921), 21: 25-28.

<sup>21</sup> Adapted from *The Reorganization of Mathematics in Secondary Education* (1923). Especially pp. 5-32.

tional thinking means ability to see relationship between variable quantities. The pupil must be shown the workings of relationships in a large number of concrete cases, as exemplified by interest and money problems, filling formulas for fertilizers or for feeds or spraying mixtures on the farm, the similar filling out of recipes for cooking on different scales from that found in the book of recipes, or dealing with premiums of insurance.<sup>22</sup>

5. The cultural aims listed are (a) the appreciation of beauty in the geometrical forms of nature, art, and industry; (b) ideals of perfection, such as discrimination between the true and false; and (c) appreciation of the power of mathematics.

**Organization of courses.** General or composite mathematics undertakes to apply to problems involving computation those principles which may be used most effectively. The lines separating mathematical subjects are disregarded; arithmetic, algebra, geometry, and trigonometry are drawn upon as needed. Those topics are appropriated which have widest practical application, and important interrelations between them are stressed. A not unimportant outcome of the course should be its guidance value; it should serve to acquaint the pupil with the field of mathematics, and to test his interests and abilities.

Arithmetic concerns itself with operations involving particular or concrete numbers; algebra, with numbers in general; geometry, with space. Different types of thinking are thus demanded, and upon this ground teachers frequently voice objections to composite mathematics. There is, however, no proof that ability or proficiency in these types of thinking is best developed by exclusive application to them in order. Such assumptions, logical as they seem to be, cannot be guaranteed to stand the test of experiment. Psychological theory indicates the error of assuming that one devotes himself exclusively to one "method" of thought for

<sup>22</sup> *The Reorganization of Mathematics*, pp. 64-73.

a long stretch of time. Inductive reasoning, for example, is not simply pure; it is rather an attitude of approach. Always there is rapid fluctuation from the concrete to the abstract and back again, some trial and error, and many tentative conclusions before preliminary steps in reasoning are completed. In mathematical thinking the rule is probably rapid shift from one type of thinking to another, rather than strict adherence for a long period of time to one.

*In the junior high school.* In the junior high school composite mathematics is being substituted to some extent for arithmetic in the seventh and eighth grades, and algebra in the ninth. Had the ninth grade been free from outside influence, it is quite probable that progress would have been more rapid. Replies to questionnaires indicated that, of eighty-eight schools organized to include grades seven, eight, and nine in the junior high school, fifty-three gave arithmetic and algebra, thirty-three gave composite courses, and two gave arithmetic only.<sup>23</sup>

Although the National Committee on Mathematical Requirements recommends emphatically that composite mathematics be required of all in grades seven to nine, this policy is not being followed extensively. A division is usually made at approximately the end of the eighth grade; one group of pupils continues composite mathematics or begins algebra, the other studies commercial or industrial arithmetic.

*In the senior high school.* But little progress has been made toward reorganization of senior-high-school courses on a general or composite basis. On account of the vocational interests of the pupils the problem is more difficult. Pre-engineering courses in mathematics could, conceivably, be organized in accordance with the principles outlined above, and at the same time give acceptable preparatory training to

<sup>23</sup> *Bur. of Educ., Secondary Circular*, no. 6 (1920), p. 4.

prospective engineers. Junior-high-school composite mathematics is usually regarded as fulfilling algebra prerequisites, so that in the senior high school pupils study geometry, a semester of advanced algebra, and perhaps trigonometry. The following lines of work have been recommended for the senior high school:<sup>24</sup>

1. Trade mathematics, aligned with industrial and other special curricula. In some curricula it will probably prove advisable to provide courses of mathematics applied to specific trades.  
Job analyses of mathematics actually used, however, indicate strongly the possibility of bringing together in one course of applied mathematics the essential operations used in a number of the trades.
2. Preliminary engineering. Ideally, this course should be for prospective engineers only, its content and organization being determined by experimentation. Practically, it is often impossible to separate these pupils, as there is always a limit to which differentiation can go.
3. Other courses. When numbers warrant, elective work should be provided for those having interest and ability in mathematics as such, and who desire to follow their interests.

For years all freshmen and sophomores in the four-year-high school were required to study algebra and geometry. As requirements these subjects are now losing ground, and they will perhaps lose ground rapidly in the future. Such mathematics as senior-high-school pupils will be required to study will probably be a part of the special curricula in which they enroll.

### BASIC SCIENCE

**Purposes of science instruction.** First of all, science instruction should give an understanding and appreciation of

<sup>24</sup> By the sub-committee of the Commission on the Reorganization of Secondary Education. *Bur. of Educ. Bull.* (1920), no. 1, pp. 23-24. Adapted.

the applications of scientific principles to the daily environment. The starting-point is with problems of immediate concern.

Two broad divisions of science instruction are apparent. In his daily work, one meets scientific principles as they are being applied to problems of production. He therefore needs to know scientific principles and their application to industry, at least if he is to do more than routine work. The problem here is education for production; the other, education for intelligent use and consumption of products. In his understanding of street construction, or of a telephone system, or the problems of water supply, the citizen is in the first instance a consumer; his science problems are very different from those of the skilled mechanic or the engineer employed to install or extend a telephone system or to keep it in running order. As the head of a household one's problem is not the manufacture of clothing, nor will it be in two thirds or more of the cases the production of foodstuffs; it is how to recognize values and how to buy most economically. The distinction between education for production and education for appreciation or consumption may well play a prominent part in organization of science courses.

**Scientific interests of children and adults.** Interests of pupils always condition teaching, so that a study of interests is bound to be helpful in arranging courses. Tables 39 and 40 present a classification, based upon a questionnaire, of scientific interests of children enrolled in general science courses, and the interests of the parents of these children. One is struck with the wide range and with the everyday nature of the scientific principles. Comparison of children's and of adults' interests shows that more than three fourths of the topics mentioned by adults are also enumerated by children. Moreover, scientific principles arousing keenest interest (as judged by frequency of mention) are identical to

TABLE 39. SCIENTIFIC INTERESTS OF BOYS AND GIRLS  
IN GENERAL SCIENCE CLASSES. FIGURES INDICATE  
FREQUENCY OF MENTION <sup>25</sup>

Stars.....	194	Snakes.....	30
Electricity.....	106	Solar system.....	30
Animals.....	95	Aurora Borealis.....	29
Planets.....	94	Hibernation.....	29
Moon.....	91	Rain.....	28
Earth.....	89	Thunder.....	28
Gravity.....	81	Geysers.....	27
Earthquakes.....	79	Tides.....	27
Volcanoes.....	75	Trees.....	27
Sun.....	69	Sound.....	26
Radio.....	67	Birds.....	23
Smoke.....	57	Hair.....	23
Mars.....	54	Evolution (cosmic).....	22
Lightning.....	51	Eclipses.....	21
Flowers.....	46	Mechanics.....	21
Ocean.....	43	Gases.....	20
Plants.....	42	Germes.....	20
Air.....	36	Sky.....	20
Light.....	35	Combustion.....	19
Fish.....	33	Comets.....	18
Wind.....	33	Geology.....	18
Astronomy.....	31	Science history.....	18
Clouds.....	31	Rainbows.....	18
Crude oil.....	31	Snow.....	18
Meteors.....	31		

a surprising degree. Boys and men are much more interested in technical processes than are girls and women. Increased age brings increased technical interest. Boys ask more questions about theories than do girls; the same difference characterizes the interests of men and women. Girls name a larger number of topics, but their interests seem to

<sup>25</sup> Curtis, F. D. *Some Values Derived from Extensive Reading of General Science* (1924), p. 34. For a parallel study, see Pollock, C. A., "Children's Interests as a Basis of What to Teach in General Science"; in *Ohio State Univ. Educ. Res. Bull.* (1924), vol. 3, no. 1.



TABLE 40. SCIENTIFIC INTERESTS OF ADULTS. NUMBERS INDICATE FREQUENCY OF MENTION <sup>26</sup>

Radio.....	90	Sound.....	29
Stars.....	74	Planets.....	27
Electricity.....	54	Diet.....	25
Crude oil.....	48	Gardening.....	25
The earth.....	47	Wind.....	25
Moon.....	43	Light.....	24
Animals.....	40	Lightning.....	24
Flowers.....	39	Chemistry (household)....	23
Volcanoes.....	39	Meteors.....	23
Sun.....	38	Snakes.....	23
Tides.....	38	Clouds.....	22
Earthquakes.....	37	Automobile.....	21
Psychology.....	36	Radium.....	21
Evolution (biological)....	35	Trees.....	21
Fish.....	35	Birds.....	20
Gravity.....	33	Physiology.....	18
Ocean.....	32	Geology.....	17
Plants.....	32	Rain.....	17
Science history.....	31	Stain removal.....	16
Mars.....	30	Coal.....	15
Air.....	29	Geysers.....	15
Astronomy.....	29	Seasons.....	15
Solar system.....	29	Thunder.....	15

be more superficial. No great discrepancy exists between scientific content of current newspapers and scientific interests of children and adults.

**Scientific principles in common use.** If teaching is to acquaint pupils with the application of scientific principles to environmental problems, analysis is needed to show the principles most often found. One method of making such an analysis is to examine newspapers for references to science. Curtis followed this plan, classifying the content for about two weeks' issues of six leading newspapers representative of different sections of the United States. Nearly

<sup>26</sup> Curtis, *op. cit.*, p. 37.

a seventh of the 630 articles gave information requiring no scientific background, while in only a very small number were scientific terms defined. More than half contained technical terminology whose meaning conditioned full understanding of the article. In making his classification, Curtis followed in part those captions commonly found in general science texts. His results are exhibited in Table 41.

TABLE 41. NEWSPAPER REFERENCES TO SCIENCE <sup>27</sup>

CLASSIFICATION	PER CENT
Diseases, sanitation, health, and hygiene.....	10.5
Radio.....	8.7
Weather and climate*.....	7.0
Aeronautics.....	6.3
Birds.....	3.8
Automobile technology.....	3.7
Forestry (chiefly conservation).....	2.9
Heat.....	2.9
Earthquakes and volcanoes.....	2.7
Evolution and heredity.....	2.5
Light.....	2.5
Fish (chiefly conservation).....	2.5
Astronomy.....	2.1
Insect pests.....	1.7
Fossils.....	1.6
Theories of cosmic evolution.....	1.0
Sound.....	0.3

\* Daily meteorological reports not included.

Aeronautics, heat, and earthquakes probably had a larger number of articles than normally for an equal number of issues of the same newspapers.

Though by far the most important topic, electricity was not listed separately because it occurred so often in connection with other subjects, such as radio, automobile technology, etc.

*Current biology.* The method of analyzing newspapers was followed by Finley and Caldwell <sup>28</sup> to determine the biological science in current usage. The complete issues of

<sup>27</sup> Curtis, *op. cit.*, p. 19.

<sup>28</sup> Finley, C. W., and Caldwell, O. W. *Biology of the Public Press* (1923). Reprinted by permission of the authors.

eleven prominent daily newspapers for June, 1921, and issues of six dailies for November of the same year were used. Table 42 contains the most important results of the classification. It will be noticed that health, animals, plants, and food are the divisions occupying by far the largest amount of space. In interpreting their results, Finley and Caldwell incline to the belief that newspapers reflect recent development in commercial and industrial aspects of biology, as well as research work going on in colleges and universities. The influence the investigation should have in shaping biology courses is outlined thus: <sup>29</sup>

The conclusion cannot be drawn that since these biological articles have been found and since they are clearly grouped into certain definite headings that therefore these are necessarily the topics toward which all high school instruction in biology should be directed. It may be that there are types of available biological information which should be presented which are omitted in the newspaper articles. Possibly, also, some needful biological information is as yet unknown to biologists, or if known has not been made available to the public press. Possibly the press would publish, and the public would like to read, much more biological material of much wider range if it were made available. These are questions which the present study does not determine, but which should receive later attention. It seems safe to conclude further that since these types of biological knowledge are going to the public in such large quantities and over the whole country, the course in school biology should consider them as a part of the legitimate foundation upon which to proceed in constructing a course of study. Other evidences when developed should also be used in whatever ways those new evidences may justify. The biological articles listed are surely thought to relate to genuine public needs or interests, else the newspapers would probably not print them. . . .

If biological study is to improve living and thinking it needs anchorage in specific situations which are meaningful to the student. Constant employment of such specific types of public use of

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<sup>29</sup> Finley and Caldwell, *op. cit.*, pp. 145-46.

biology as are set forth in newspapers studied would probably do much to advance the value of biological instruction. These types of use must be accompanied with and followed by careful presentation and exact mastery of biological knowledge by means of laboratory work, text study and discussions, but the real foundations must be had in some kinds of genuine life needs such as indicated in this investigation.

TABLE 42. NEWSPAPER ARTICLES DEALING WITH BIOLOGICAL SCIENCE <sup>30</sup>

MAIN TOPIC	NUMBER OF SUBDIVISIONS OF TOPICS	NUMBER OF CLIPPINGS	LENGTH IN INCHES	AVERAGE LENGTH OF ARTICLE IN INCHES
Health.....	9	897	7,550	8.4
Animals.....	10	755	6,422	8.5
Plants.....	12	660	5,521	8.4
Food.....	7	533	4,024	7.5
Organizations of pro- ducers.....	2	81	652	8.0
General nature.....	3	74	843	11.4
Evolution.....	4	47	446	9.5
Fictitious.....	1	14	48	3.4
Totals.....	48	3061	25,506	8.3

**The organization of courses.** General science is now taught in practically all junior high schools and in a large majority of the ninth grades of the four-year high schools. From the standpoint of total number of secondary schools, it is primarily a ninth-grade subject. In reorganized systems, however, it is pushing downward into the eighth, and even the seventh, grades. Its point of view demands organization of subject-matter from the standpoint of environmental problems, rather than the fields of science, as illustrated below. It strives to give a composite view of life and nature, a view which can hardly be given by any special science be-

<sup>30</sup> Finley, C. W., and Caldwell, O. W. *Biology of the Public Press* (1923), p. 17. Reprinted by permission of the authors.

## LOGICAL AND PSYCHOLOGICAL ORGANIZATION OF SUBJECT-MATTER

## HEAT (PHYSICS)

1. Heat and temperature
2. Expansion
3. Measurement of heat
4. Change of state
5. Heat and work

## HEAT (GENERAL SCIENCE)

1. Methods of heating
2. The fireplace as a means of heating
3. Hot-water heating systems
4. Hot-air furnaces
5. The stove as a heater
6. The fireless cooker
7. The cheapest heat

cause the latter is limited to a particular field. Since it has more direct bearing upon life, general science should more easily arouse an interest in science. For those who are to continue in school it serves as a valuable function in guidance, furnishing as it does a basis for later choice of science courses, and serving as a transition from the work of the lower grades to that of the higher. General science is organized as well as, if not better than, any of the "composite" or "general" courses. There is a fairly definite content and method for the subject.

In the senior high school, specialized courses in science are being arranged for pupils interested in industrial, agricultural, or home economics curricula. In all too many cases, however, no attempt at such adaptation is made, even in schools with sufficient enrollments to permit it. Pupils are enrolled in the conventional courses — biology, physics, and chemistry — without reference to their particular interests.

There seems to be no reason against reorganizing the conventional courses along the general lines sketched for general science. Each needs a redefining of purpose and rearrangement of materials so as to bring it into harmony with valid educational principles. As it is, interest is stifled through insistence that pupils master "the fundamental principles

upon which the science is based," or that they gain a "clear idea of the underlying principles" of the science and a "definite knowledge of its more important facts."<sup>31</sup> Nor has interest been helped by the over-formalized laboratory work, with logically planned exercises, recipe-like directions, and pedantic notebook writing. Biology should be interesting, even fascinating. The same may be said with equal force about physics and chemistry; yet they have constantly enrolled smaller and smaller percentages of pupils. If they were free electives instead of required subjects, and if no change were made in their content and method, it is probable that they would attract even smaller numbers of pupils.

*Values of the laboratory method.* Laboratory work is of value presumably because it instills the scientific attitude of thinking. However, no one has succeeded in showing with any degree of definiteness how much one's thinking is improved by a year or more of secondary-school science. It might be remarked that science teachers have not applied to any considerable degree their own vaunted methods to the solution of this problem. The theory of transfer of training indicates that such improvement is entirely possible, but that it will not take place automatically. It also supports the statement that it is best to develop habits of thinking in the fields where they are desired.

Laboratory methods are also favorably regarded as an effective method of training. This can be readily submitted to experiment. Evidence is available to warrant the statement that laboratory experiments offer no advantage over demonstration in imparting essential knowledge. On the contrary, experiments<sup>32</sup> show that the lecture-demonstration

<sup>31</sup> Statements of authors of widely used textbooks in chemistry. Cf. Powers, S. R. *A Diagnostic Study of the Subject-Matter of High School Chemistry* (1924), p. 62.

<sup>32</sup> Experiments to 1925 summarized by Downing, E. R. *Sch. Rev.* (1925), 33: 688-97.



method gives better results in teaching not only scientific principles but also in imparting skill of technique in earlier stages and for solving new problems. Pupils instructed by the conventional laboratory methods fail more often than at any other place in understanding "what the experiment proves." Certainly the lecture-demonstration method is much more economical of both time and equipment than the laboratory method. It may turn out, after all, that the primary purpose of laboratory work is to give skill with definite types of apparatus.

#### METHODS AND INSTRUMENTS OF THOUGHT

**Reflective thinking.** It is universally admitted that the individual should acquire, as a result of his high-school training, something of the scientific method of thought. The advocates of the sciences rarely fail to maintain that their subjects are preëminently fitted to give training in scientific method, and this argument has been advanced again and again to support the sciences when some unorthodox educational theorist has made an attack upon them. Since this is one of the outstanding aims of science teaching, it is reasonable to expect that students will have been made conscious of the scientific method as a method of thought applicable not only to the sciences, but to other fields as well. Whether it is because science teachers have given little consideration to the present theory of transfer of training, or because of the failure to generalize and apply to other fields the method of thought inherent in a field of knowledge, the fact remains that the average high-school student is disappointingly unable to recognize anything in common between the method he presumably employed in the laboratory and the problem-solving attack of the social sciences, mathematics, and other high-school subjects. This fault is, of course, not to be laid entirely at the door of the science teacher. The scientific

attack is common to many fields, it is one of the most important study habits, and it should be an aim of all teachers.

**Concepts derived from various school subjects.** When the full values of a subject of learning are presented, there is usually included an enumeration of certain concepts and modes of thought which are supposed to result from study of that branch of knowledge.<sup>33</sup> From history comes the concept that human activity and social organization is dynamic and evolutionary; likewise, there comes the realization of the dependence of the present upon the past, the responsibility of the present for the future, and a recognition of the continuity of human experience and civilization. Through natural science is gained a knowledge of the laws of nature and of natural phenomena which releases the mind from superstition; from biology comes the conception of evolution, which is now applied to other fields and which has so profoundly modified thought. From the study of foreign language comes a "language consciousness."

This is but a scant enumeration of some of the concepts and methods of thought which may presumably be acquired through the study of the various subjects. Such concepts usually become conscious only after mature deliberation; they are not conscious in the minds of children of junior-high-school age, and very rarely in the minds of senior-high-school students. They evolve after the individual has studied in one field for an extended period, and after he has gained considerable experience and has given a large amount of thought to the various questions. That such concepts furnish a legitimate aim of education will hardly be questioned. We very much need, however, a classification of the concepts and modes of thought which may be acquired in each of the several subjects and activities of the school; we

<sup>33</sup> For summaries, see Inglis, A. J. *Principles of Secondary Education* (1918), pp. 492, 521, 553.

need to know further, the best means of inculcating such concepts and modes of thought in the minds of students.

**The relation of language to thought.** Words seen, heard, or imaged are symbolic of meanings. Language is thus a system of signs used to mark off meanings, both to ourselves when thought is being carried on, and to others when thought is being communicated to them. Thought deals with meanings, and since words are the vehicle through which meaning is most often presented to ourselves, language becomes the chief instrument of thinking. One of the functions of language is to symbolize meanings in our own thought processes. Words are thus absolutely necessary for thinking, and with a minimum of words there is a minimum of thought.

It follows that the pupil's vocabulary should be increased, and that the meanings attached to the words already in his vocabulary should be enriched and enlarged. Words which are understood only in context should have their meanings expanded and made more accurate, so that the pupil may acquire the ability to use them in his own thinking and expression; words which are familiar only in sound should be studied to the end that they may become a part of the general vocabulary. Words must symbolize experience before they really have any meaning, so that the prime method of enlarging the meaning of words or of acquiring the meaning of new words is through experience. This does not gainsay the fact that a large number of words can be taught through calling upon the past experience that the individual has had; it does assert, however, that an apperceptive background is necessary for the understanding of a new word.

*School activities which give training in the use of words.* One of the primary functions of English instruction is to enlarge the vocabulary and to render meanings of words more precise. In the past, oral and written composition have em-

phasized proficiency in the use of words in the field of expression, neglecting to a considerable degree the use of language as a tool of thought. Use of language as a tool in thinking should be a functioning aim of English. When it is made such there will be more emphasis on thought in oral and written expression.

We are not limited to English for improvement in the ability to use words. Every school subject and school activity has its vocabulary, and use is made of this vocabulary in thinking as well as in expression. An understanding of words is necessary for clear thinking in whatever field. Other subjects thus share with English the responsibility for vocabulary improvement.

#### TOPICS FOR DISCUSSION AND INVESTIGATION

1. Which teachers are responsible for instruction and training in the fundamentals?
2. Why do vocabulary tests play an important part in the measurement of general intelligence?
3. Investigate methods used in training pupils to use the library. Comment upon the effectiveness of the methods.
4. How may a pupil improve his speed and comprehension in silent reading?
5. Explain, in some detail, the method of teaching incidentally the mechanics of English. Can we dispense with formal grammar?
6. How would you carry out an investigation to determine the value of foreign language instruction?
7. Note the following quotation: "Certainly less than five per cent of the pupils who study German in the secondary schools of this country will ever have the slightest need of utilizing that language for purposes of social intercourse and certainly less than one per cent of all pupils attending the secondary school will find such values in that study. The case is much the same for the study of French for purposes of social intercourse . . . The school public and school authorities have failed to appreciate the fact that bilingual men and women in this country are in plentiful supply in the great majority of instances and that the smattering of German, French, or Spanish gained in the secondary school does not enable individuals so equipped to compete on anything like equal terms with the German-American, the French-American, or the Spanish-American . . . That

as high as five per cent of the pupils in the public secondary schools should study a foreign language for commercial or vocational purposes would probably be a gross over-estimate." (Inglis, A. J. *Principles of Secondary Education*, pp. 453 ff.)

Do you agree with the thought expressed in the quotation? How could one prove or disprove the statement?

8. Will it be possible to organize texts in general or composite mathematics from the standpoint of use, or must account be taken of the various divisions of mathematics?
9. One of the important studies of engineering students is mathematics. How much mathematics does the average graduate of a school of engineering actually need in his work?
10. What is the difference between pure and applied mathematics or science?
11. Investigate the various tests and scales for measuring accomplishment in the mechanics of English, mathematics, science, etc. How can you use them in your work as a teacher?
12. Tabulate the errors made in English appearing in a set of papers written by a class in secondary school or college. Compare with tables found in this chapter.
13. Does the training in scientific method which you received in your classes in physical science transfer to the field of education? What steps could your instructors have taken to insure certainty of transfer?

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## CHAPTER XV

### EDUCATION FOR CITIZENSHIP

**Purpose of education for citizenship.** In this chapter, education for citizenship is used to mean training for life in association with others, with particular reference to the interests, possessions, privileges, and duties which one citizen shares with others. Such education involves sufficient general training to permit one to inform himself on matters of common concern and to associate easily with others, knowledge of the affairs and purposes of the social groups to which he belongs, and ability and disposition to participate in group decisions and actions.

In a broad sense, any force producing change in human beings for the better is included among the agencies of citizenship. Here, however, consideration will center upon the social subjects as means for imparting information relating to the duties and privileges of citizenship, the provisions made in school for arousing desirable attitudes of citizenship, and opportunities offered for participation in the activities of citizenship.

**Social organization.** A social group is comprised of those persons collectively who are united by a common purpose and who recognize one another as associates. In this category fall class organizations, congregations of churches, labor unions, athletic clubs, or political parties, etc. When we speak of the social group from the national standpoint, we refer to a body of communities or social groups with their common interests and aims. Our national society is thus an integral whole, analyzable into subdivisions or groups, which, although they cling together, are nevertheless dis-

tinct and separate. For example, the national political organization consists of all citizens. Its first subdivision results in the major political parties; the next, in district or state organizations of each of the several parties; continued subdivision carries one through city or county organizations to the ward or voting precinct. Analysis can be carried to the individual — in other words, to the political or social unit.

The worth of a given mode of social life is determined, as Dewey points out,<sup>1</sup> by the interests held in common by its members, and by the amount of interaction and coöperative intercourse allowed with other groups. The value of a school organization, such as a club, as a mode of social life, is dependent upon the variety of interests consciously shared by its members, and by interplay with other organizations of the school. The club must do more than merely hold its members together; it must be of such a nature that they will not be isolated from other organizations, but will enter intimately into relationships with them for the common good of the school.

*Social integration.* The process by which the numerous and diverse units and parts of the American Commonwealth are brought together into a single society or community, and are made conscious of, interested in, intelligent about, and responsible for social duties, interests, usages, and problems may be termed social integration. The necessity and importance of social integration and social solidarity are so well understood as to make detailed discussion unnecessary. Suffice it to say that a prime reason for the establishment of public schools in this country was that citizens might collectively and coöperatively render intelligent decisions upon questions of common concern. The same line of reasoning, applied to the problems of the secondary-school curriculum

<sup>1</sup> Dewey, J. *Democracy and Education* (1916), p. 96.

to-day, leads many students of education to set up a core curriculum of social studies, whose purpose is to give enlightenment upon the common problems of citizenship, and which constitutes the only subjects aside from the fundamental processes and health activities to be required of all pupils.

The nature of the training the school must give to insure social integration is best understood by considering a few of the differences among individuals and groups of individuals which prohibit their entering into relationships with other groups. Among these differences are the following:

(1) Differences in ability to read the English language, caused by illiteracy, poor education, or foreign birth, make impossible anything like equal understanding of common problems. Differences in general educational qualifications produce a similar result.

(2) Different conceptions of the nature of democratic government and of the functions of public officials, traceable sometimes to conditions under which immigrants formerly lived and sometimes to influences in this country affecting native-born as well as foreign-born, cause divergent reactions to questions which can and should be decided upon a basis of fact.

(3) Diverse religious beliefs sometimes split a community into as many groups, causing those affiliated with one sect to associate only with their own kind in practically all social life. Religious differences are often merged with racial differences, causing loss of mutual understanding and respect for those whose customs and beliefs are different.

(4) To some, freedom of speech evidently means freedom to say anything at any time and in any place; to others, it means the privilege of examining in a temperate and scholarly way a stated principle or custom; to others, the principle of freedom of speech is violated if criticism is directed

against any phase of the existing order. Similarly different conceptions prevail as regards the right of assemblage, freedom of the press, and loyalty to country.

(5) Among the various social and economic classes are found different standards of living. The point of view one takes of a common problem is quite likely to be modified by the conditions under which he lives.

*The problem of social integration illustrated.* People from countries of Northern Europe began coming in large numbers to the United States about 1840. The Irish were the first to emigrate extensively, but they were soon followed by the Germans, Scandinavians, and others. This has been termed the "old" immigration, in contrast to the "new," which has occurred chiefly within the last twenty-five or thirty years, and in which other nationalities play the predominant part. In 1882 nearly three fourths of all immigrants could be classified as of the old type. A small percentage only (10.5) came from Southern and Eastern Europe. Twenty-five years later, the proportions were nearly reversed. In particular, Austrians, Hungarians, Italians, Russians, Greeks, Servians, Roumanians, etc., have taken the place of the English, Scotch, Germans, and Scandinavians.

The immigrant from Western Europe is usually regarded as more desirable than the immigrant from Southern and Eastern Europe. The old immigrants are of kindred stock, and have social and political ideas and ideals similar to those of the native-born Americans. They distribute over a wider area than do the new immigrants, and are found in many different occupations. Many have settled upon farms, especially in the Middle West. They usually bring their families and expect to make this their permanent home. They have a very small amount of illiteracy, and are industrious, thrifty, and law-abiding. While they often segregate them-

selves into communities, and show a tendency to maintain Old-World customs and their native languages, they offer no great problems of assimilation.

In contrast, the new immigrant is often illiterate and ignorant. He remains for the most part in the cities of lower New England, the Middle Atlantic States, and the East Central States, where he finds employment in the steel mills, mines, and other industrial establishments. About half the labor force in the basic industries is foreign-born, and about three fourths of the recent immigrants are unskilled. Approximately two thirds of their number are males, many of whom expect to return to their families after a period of work and saving here. They live in crowded tenements or boarding-houses and work for a lower wage than native-born citizens, thus tending to lower the standard of living. Their profound ignorance of American political and social institutions, coupled with what is sometimes referred to as constitutional traits which are out of accord with democratic principles of government, constitutes a serious obstacle to upright government. Their racial origins make the problem of assimilation extremely difficult, and this is enhanced by their disinclination to become citizens of this country, as shown by the fact that hundreds of thousands have made no step toward naturalization. It is further enhanced by their inclination to group together and to speak their native languages, and by attendance of their children upon parochial schools where instruction is conducted in a foreign tongue.<sup>2</sup>

<sup>2</sup> In 1924 a law was passed restricting immigration. Under its provisions immigration from a single country is limited to "two per cent of the number of persons born in that country who were residents of the United States as determined by the census of 1890." In all, 161,184 immigrants may come per year. This number of newcomers is not so large as to prohibit assimilation, and the immigration from Southern Europe is greatly curtailed.

Not only must the schools coöperate in teaching foreign-born adults the English language, the meaning of our social and political institutions, and our standards of living, but they are responsible for carrying out the work of assimilation as it affects the children of foreign-born parents. The secondary school has the task of assisting young people, who in comparison with their parents are little influenced by Old-World customs and traditions, and whose habits have not become Americanized, to stabilize their conduct. It faces the additional problem of ministering to their diverse intellectual and vocational needs.

**Necessity of clear thinking on civic matters.** An objective which instruction in the social sciences should have is ability to consider intelligently current social problems. As long as society is dynamic it will be impossible to arrive at the final conclusions of many matters. As long as there are social changes, so long will new and unforeseen problems arise.

*Emergence of new problems illustrated in growth of cities.* Increasing industrialization in a nation has always been accompanied by a growth of its cities, and there has been no exception to the rule in the United States. The time has come when more than half of the total population of the nation is classified as "urban." The ratio between the city and the rural population varies with different localities. In the majority of States, from twenty-five to fifty per cent of the people are urban. In some of the New England, most of the Middle Atlantic, and certain of the Western States, from fifty to seventy-five per cent of the inhabitants live in cities, while in Massachusetts, Rhode Island, New York, and New Jersey, the percentage is in excess of seventy-five. Large industrial centers have shown an amazing increase in population. This contrasts strikingly with the small gain in rural towns and districts. Indeed, many such communities show either a stationary population or an actual falling off in



numbers. The ratio between the urban and the rural population for the decades since 1880 is shown in Table 43.

TABLE 43. URBAN AND RURAL POPULATION OF THE UNITED STATES, 1880-1920 <sup>3</sup>

CLASS	1920	1910	1900	1890	1880
Total no. . . .	105,710,620	91,972,266	75,994,575	62,947,714	50,155,783
Urban . . . . .	54,304,603	42,166,120	30,380,433	22,298,359	14,358,167
Rural . . . . .	51,406,017	49,806,146	45,614,142	40,649,355	35,797,616
Total per ct.	100.0	100.0	100.0	100.0	100.0
Urban . . . . .	51.4	45.8	40.0	35.4	28.6
Rural . . . . .	48.6	54.2	60.0	64.6	71.4

The growth of the cities has brought social and political problems <sup>4</sup> which have not been entirely solved. Some of these will be commented upon briefly.

(1) There is a great congestion in living quarters. In large cities, only the more fortunate have homes to themselves. When families are grouped in apartment houses or huddled together in tenements, the effect upon home life is disintegrating. Children often lack parental care and guidance, there is a small amount of play space at best, and in the tenement districts children are in many cases poorly clothed and improperly fed.

(2) A greater amount of poverty, pauperism, and crime is found in cities than in rural districts. Low wages, irregular work, and improvident spending of money keep nearly a third of the population of the larger cities below the poverty line. Crime often springs from poverty. It usually increases, also, with the congregation of people in large groups.

<sup>3</sup> *Fourteenth Census*, vol. 1, p. 43. An urban community has 2500 or more inhabitants.

<sup>4</sup> See Elwood, C. A. *Sociology and Modern Social Problems* (1919).

(3) The cities have always been a favorite settling place for immigrants. Nearly fifteen million persons of foreign birth were living in this country at the outbreak of the Great War in 1914. The great majority were from Southern and Central Europe, unskilled in any trade, and urban in habitation. Their ignorance of our institutions has been an important factor in the development of political bossism and corrupt city government.

(4) A new type of government for cities has been made necessary by their continued growth. Such problems as pure water supply, disposal of waste and refuse, traffic regulations, and public places of amusement are representative of those confronting city government.

(5) Changes which have occurred in farm life are hardly less extensive than those which have taken place in the city. There has been a constant stream of migrations from the country to the city, tenantry has increased, the country school has dwindled until it is now recognized that it must be supplanted, and the rural church is on the decline.

*How the problem is to be met.* If curriculum-makers were gifted with prophecy, solution of the problem of citizenship training would be easy. They could tell us what we should teach; perhaps they could tell us also how to teach so children might not forget, and what to do to develop attitudes and dispositions to action. As it is, reliance must be placed upon other methods. Chief among these is to make problem-solving part and parcel of social science instruction. A pupil who habitually seeks out and clarifies the point at issue, collects and weighs evidence, forms a conclusion, and then acts upon his conclusion, can be expected later to behave in a similar way when confronted by a similar problem. He should, of course, be made clearly conscious of the method, and pointed toward its future use:

New questions grow out of old ones. Familiarity with

past and present problems will thus provide a basis for intelligent consideration of the new. This is, in a sense, a rephrasing of the oft-stated hope that the study of social science, history particularly, will lead to a realization of the dependence of the present on the past and of the responsibility of the present for the future. Taken in connection with the scientific method of attack and stress upon participation in the solution of current problems, the meaning of the old aim is enlarged. Passive realization gives way to functional ideas and ideals.

**Present status of instruction in social sciences.** The recommendations concerning the study of history contained in the report of the Committee of Ten were not closely followed by the high schools. Consequently, other groups, particularly those sponsored by the American Historical Association, attacked the problem of organization of means and materials of history instruction. After much deliberation, recommendations were made that history be taught in a chronological manner, beginning with ancient history, and following with mediæval and modern, English, and finally with American history and civics.<sup>5</sup> This plan dominated history instruction for twenty years or more. Even to-day the majority of schools follow the general outline. According to the Report of the Commissioner of Education (see Table 59, Chapter XXI), 18 per cent of all pupils enrolled in public and private secondary schools were in 1922 studying ancient history; 16 per cent, mediæval and modern; 3 per cent, English; 15 per cent, American history; and 19 per cent, civics and civil government. The practice long prevailed of combining American history and civics — or rather of arranging them tandem fashion with civics last — so that in all probability fewer than 19 per

<sup>5</sup> Committee of Seven on the Study of History in Secondary Schools (1899), *Report*, pp. 140-41.

cent of the pupils were studying civics as a separate subject. In contrast are the 2.25 per cent engaged in the study of sociology, and the 4.5 per cent pursuing economics.

"*Modern*" *social studies*. In the interests of the National Committee for Teaching Citizenship, Moore attempted to ascertain the status of the modern social studies in the high schools of the country. His data are set forth in Table 44. In general, they are not essentially different

TABLE 44. SOCIAL STUDIES OFFERED IN 6624 HIGH SCHOOLS <sup>6</sup>

SUBJECTS	PERCENTAGE OF SCHOOLS OFFERING	NUMBER OF ENROLLMENTS	PERCENTAGE OF TOTAL ENROLLMENT
Civics (old type).....	88	278,419	24
Modern civics.....	58	219,880	19
Economics (old type).....	41	65,080	6
Modern economics.....	29	47,263	4
Sociology .....	25	37,541	3
Other social-science courses.....	2	4,916	1
Current events.....	86	401,197	34

from those contained in the Report of the Commissioner of Education. The apparent prominence of current events is due to the fact that this instruction is given, not separately, but as a part of the regular social-science courses.

*Social studies in high schools of the North Central Association.* The status of the social sciences in the North Central Association, as shown by questionnaires from 475 representative high schools, is exhibited in Table 45. It will be noticed that the backbone of instruction consists of "old line" courses. Community civics, economics, and sociology have apparently established themselves in this area as "regular" high-school courses, with vocational civics,

<sup>6</sup> Arranged from data given by Moore, H. H. *Bur. of Educ. Bull.* (1922), no. 45, p. 3.

TABLE 45. SOCIAL SCIENCES IN HIGH SCHOOLS OF THE NORTH CENTRAL ASSOCIATION, BY PER CENTS<sup>7</sup>

SUBJECTS	122 SCHOOLS (1-150)*	197 SCHOOLS (151- 400)*	83 SCHOOLS (401- 800)*	73 SCHOOLS (800- up)*	TOTAL (475 SCHOOLS)
Ancient History.....	65	53	49	50	55
Ancient and Mediæval History..	29	39	46	47	39
Mediæval History.....	11	13	19	30	16
Mediæval and Modern History..	45	42	33	30	39
Modern History.....	43	58	61	74	57
English History.....	11	11	18	30	15
General History.....	10	10	7	8	9
American History .....	98	100	99	100	99
Community Civics.....	31	39	34	45	37
Civics.....	88	87	88	89	88
Vocational Civics.....	6	10	10	10	9
Economics.....	54	65	76	81	69
Sociology.....	39	30	30	23	33
Social Science.....	1	10	7	15	7
Educational Guidance.....	3	0	3	0	2
Vocational Guidance.....	6	6	7	8	5

\* Enrollment.

“social science,” and educational and vocational guidance bidding for places. The fact that the “old line” subjects have a particularly strong hold upon the small high schools should not be overlooked.

It might be well to remark, incidentally, upon prevailing methods of instruction. Notebook work was required in fully three fourths of all history courses, and in something like half the others. The stereopticon found a prominent place in large high schools, especially in connection with ancient history. From a quarter to a half of all teachers claimed to use the socialized recitation; somewhat fewer claimed to have supervised study. Supervised study ap-

<sup>7</sup> Computed from data given by Monroe, W. S., and Foster, I. O. *Univ. of Ill. Bull.* (1923), vol. 20, no. 18, pp. 12-14.

parently occurred more often in smaller schools than in larger ones. Finally, American history and civics were the only subjects required in more than fifty per cent of the cases. Less opportunity for choice, and evidently greater disposition to limit choice, occurred in small schools.

*Recent and probable future changes.* The chronological arrangement and the old courses in history are slowly giving way to the modern subjects. Moore found, for example, that approximately half of 5054 high schools were offering modern courses in 1918-19; in 1921-22, nearly three fourths of 6624 schools had thus broadened their programs. Other data are available which point to the same general movement.

How long it will be before social science instruction will be organized according to present educational theory it is impossible to foretell. The usual obstacles, such as general acceptance of a new point of view, improperly trained teachers, and suitable textbooks, are all present and prominent. Great irregularity prevails in the amount of change thus far made. Not the least of the hindrances to reorganization are college-entrance requirements. It is significant that greater modifications have occurred in those sections where colleges have liberal views about the function of a secondary school.

**Criticism of social science courses.** Training for effective citizenship has always been an important aim of history, civics, and geography; similarly, it is a prominent objective of the more recent studies of economics and sociology. The amount of time spent upon geography and history in grades seven to twelve, as well as the importance of the aim to which they are supposed to contribute, both justify and demand a rigid examination of content and methods of teaching. Such examination has been in active progress for some time. From it have been crystallized



several important criticisms and suggestions for improvement.

*History and geography too encyclopædic.* There is no question that textbooks and courses in history and geography have contained too many facts. Seventh-grade geography has been literally "the science of the description of the earth's surface in its present condition, and of the distribution upon it of its various products and animals." In order to include all the items of description and distribution, writers have reduced their textbooks to bare outlines of facts, devoid of descriptive detail<sup>8</sup> so necessary to interest and understanding. Pupils have been required to memorize political boundaries, names of cities with their location and important industrial products, and the amount of rainfall upon the eastern slope of the Andes. The case is not much different with history. Texts are summaries of events and historical movements, far more suitable for review purposes of students who have made an extended study of history than for introducing immature pupils to the subject. Facts and principles come in such rapid succession, with so little supportive and descriptive material, that the pupil is at a loss to know an "important" topic from an unimportant one.

Both psychology and common sense would indicate that pupils cannot remember such an array of facts. The truth of the matter is that they do not remember them. Tests<sup>8</sup> given to high-school pupils showed retention of only a third of the facts called for; sixth-, seventh-, and eighth-grade pupils could answer fewer than a fifth of the questions put to them.

*Material should be organized around a few important topics.* Memory will be assisted and retention of important principles more nearly guaranteed if subject-matter in the

<sup>8</sup> Rugg, E. U. *Sch. Rev.* (1919), 27:757-71.

social sciences is organized around important questions or projects. Many concrete, interesting details should be involved in the intensive treatment of one of these projects, for they give meaning to the major question. As Parker <sup>9</sup> says, details are to be forgotten; general meaning remembered:

Once they have served their purpose, the details may be forgotten, and probably should be forgotten for purposes of mental economy. It is commonly said that nine tenths of what we learn in school is forgotten. This is probably true. Therefore it is especially important that some method be adopted that will assure that the one tenth that is remembered is worth remembering. As long as encyclopædic, unrelated, unorganized details are taught, the part that will be remembered depends largely on chance. On the other hand, if large, fundamental issues are emphasized, and the details so selected and arranged as to bring the large issues to a clear focus, we may feel reasonably sure that these will be the parts that will be remembered.

Such reorganization would be disruptive to the prevalent chronological arrangement in history. This is not regrettable. The historian, in common with the rest of us, is in error when he assumes that the kind of history which is good for him is the kind which is good for a boy or girl. We need history which will aid in giving a background of understanding for the numerous current issues before us. This point of view is becoming more and more prominent. Its influence upon the secondary curriculum will result in the elimination of many facts now religiously taught, and history will be used to interpret problems of present social significance.

*Current industrial, social, and political problems inadequately treated.* About as good a criterion as can be taken for the content of the average course is the material con-

<sup>9</sup> Parker, S. C. *Methods of Teaching in High Schools* (1920), p. 78. Ginn & Co., publishers.

tained in the textbook. Using four recent and popular texts in history as a standard of evaluation, Rugg emphatically concludes that present courses treat pressing industrial, social and political questions inadequately or not at all. Such a question as the disappearance of free land and the decline of the number of owners was mentioned in none of the four texts. Three books totally ignored the crucial problems of wise ownership and development of minerals, forest land and water power. Such historical references as were made to land and land policies were in legalistic phraseology, and did not relate in any way the history of the matter with its current phase. A similar state of affairs existed in connection with marketing and the distribution of goods, the history of the labor movement, admission of immigrants, American city life, and similar problems.<sup>10</sup>

Unless the suspicion that the average teacher achieves little success in connecting the "Period of Colonization" or the "Period of 1783-1812" with the present is unjustified, Table 46 shows how futile it is to expect secondary pupils to gain from the usual course in American history enlightenment on present problems. They are so busy learning the details of the Louisiana Purchase and drawing maps to show the territory included, and teachers are so busy asking questions to see if pupils have learned the details and checking over notebooks to see if maps have been drawn, that no time is left to discuss the influence of French ownership or to describe customs of living traceable to French occupancy. So much time is consumed by similar topics that but little can be given to the "present period." This is further abbreviated because of the scant treatment accorded current problems in many textbooks, and by the fact that in some cases the text is out of date.

<sup>10</sup> Rugg, H. O. *Twenty-Second Yearbook* (1923), part 2, pp. 1-27.

TABLE 46. THE PERCENTAGE OF SPACE ALLOTTED TO EACH OF THESE PERIODS IN AMERICAN HISTORY BY THE STUDY OF TWENTY-THREE ELEMENTARY-SCHOOL TEXTS PUBLISHED 1860-1912 (BAGLEY AND H. O. RUGG); EIGHT CURRENT HISTORIES (E. U. RUGG); THE COMMITTEE OF EIGHT REPORT (1909); AND EIGHT EARLY TEXTS PUBLISHED BEFORE 1860 <sup>11</sup>

PERIOD	THE BAGLEY- RUGG STUDY	STUDY OF CURRENT HISTORIES	COMMITTEE OF EIGHT REPORT	EARLY HISTORIES PUBLISHED BEFORE 1860
Discovery and Exploration				
1000-1607.....	8.27	5.73	12.90	8.09
Colonization 1607-90.....	15.95	8.89	21.20	28.73
Colonial Wars 1690-1763.....	3.67	6.48	3.10	6.48
Pre-Revolutionary War				
Period 1763-1812.....	4.11	3.50	2.06	4.32
Revolutionary War 1775-83..	9.58	5.67	14.40	20.36
Period 1783-1812.....	14.17	10.82	8.70	9.60
Period 1812-61.....	21.01	24.28	22.70	*22.76
Civil War 1861-65.....	10.22	7.70	6.10	
Period 1865-1912.....	14.45	21.69	9.30	
Period 1912 to date.....		5.86		

\*The proportionate emphasis is not exactly comparable in the last column because these histories were published between 1821 and 1857.

*Doubtful value of instruction in cultivating attitudes.* Sense of ownership, rightly trained, develops responsibility. However, we have not yet worked out a satisfactory method for arousing feelings of joint ownership and responsibility for civic institutions. When such a method is perfected, it will probably be based more upon coöperative action resulting in satisfaction than upon reading and verbal description. Such factors as the amount of effort, of labor, and above all, of constructive work expended in acquisition lead to the development of a sense of ownership. A group of boys who have spent time and constructive effort on a playground or

<sup>11</sup> Rugg, *op. cit.*, p. 323. See also the *Seventeenth Yearbook* (1918), part 1, pp. 90-98.

park have an entirely different attitude toward it from that manifested by boys who had no part in the enterprise. Application to training in citizenship is evident.

More than half of all pupils replying to a questionnaire sent to high schools in the North Central Association testified to a positive dislike for history. The subject appears to be much disliked by girls; boys, on the other hand, give it only a small vote of confidence.<sup>12</sup> If the feelings of these pupils are representative of those of the great body of boys and girls enrolled in history classes, it is difficult to see how the study can contribute effectively towards the formation of permanent interests in civic affairs.

**Objective investigations to determine content in social sciences.** We do not have anything like a complete list of the duties of a citizen, nor do we know definitely what knowledge of historical, political, economic, or sociological nature is needed for understanding citizenship problems. A number of investigations have been made or are being made to answer these questions, the most important of which will be reviewed briefly. They involve several different methods of attack, each of which has its advantages and limitations. By combining judiciously the results, it is certain that vast improvement can be made in teaching social science in secondary schools.

*Analysis of textbooks.* By analyzing the content of textbooks, one may ascertain with considerable accuracy how class time is spent. Table 46 indicates that not over six per cent of the total time allotment in American history is spent upon current topics; Table 47 shows that current texts devote about a third of their space to social and economic problems whose significance doubtless relates to past epochs. It also shows that social and economic problems

<sup>12</sup> Davis, C. O. *Proceedings of the North Central Association* (1924), part 1, p. 125.

now receive approximately twice the attention accorded to them in early texts, and more attention in histories written for the seventh and eighth grades than for later grades. This increased emphasis has come at the expense of subject-matter military in nature. Stress upon political matters has increased rather than diminished, and is stronger in grades nine to twelve than in grades seven and eight. That political matters discussed in the texts relate to the past, and that sequence in the study of a problem like the tariff is probably broken by chronological arrangement, should not be overlooked.

TABLE 47. <sup>†</sup> COMPARING EIGHT EARLY AND EIGHT CURRENT COMMONLY USED TEXTBOOKS IN AMERICAN HISTORY OF ELEMENTARY AND HIGH-SCHOOL GRADE IN PERCENTAGE OF SPACE DEVOTED TO (1) POLITICAL, (2) MILITARY, AND (3) SOCIAL AND ECONOMIC MATERIAL <sup>13</sup>

TEXT	EARLY TEXTS			CURRENT TEXTS *		
	Political	Military	Social and Economic	Political	Military	Social and Economic
I.....	36.7	37.7	25.6	39.1	12.6	48.3
II.....	32.8	56.2	11.0	44.6	17.9	37.4
III.....	46.6	43.8	9.6	37.5	25.4	37.0
IV.....	47.7	43.4	8.9	44.5	9.6	45.9
V.....	38.5	49.6	11.9	55.4	14.1	30.4
VI.....	41.5	25.5	34.0	53.7	10.9	35.4
VII.....	44.7	48.3	7.0	61.5	14.2	24.2
VIII.....	50.3	43.6	6.1	62.7	11.9	25.4
Average.....	38.4	44.3	17.2	49.9	14.6	35.5

\* The first four texts are for elementary grades; the last four, for high-school.

H. O. Rugg and his colleagues at the Lincoln School of Teachers College have for several years been at work upon the problems of social science instruction. One means they have employed to arrive at the questions and issues of mod-

<sup>13</sup> Arranged from tables given in the *Twenty-Second Yearbook* (1923), part 2, pp. 320-21.



ern social life is analysis of some one hundred and fifty books written by recognized authorities of government and politics, specialists in the field of immigration, students of industrial and economic problems, etc. A short list of contemporary problems derived in this manner is given below. Compilation of the entire list has not been completed; in any case lack of space would prohibit its reproduction here. The problem of immigration, for example, contains thirteen major divisions and four hundred and fifty subordinate questions:

Immigration

Natural resources

Industry and business

Development and maintenance of an adequate and efficient transportation system in America

The American city

Education and the formation of intelligent public opinion

Miscellaneous social problems

Government in the American democracy

Problems of world affairs <sup>14</sup>

Horn asked heads of social science departments in colleges to make lists of problems of undoubted crucial nature in present-day life, and to name the books which gave the most intelligent treatment. These books were then scored to determine their content and points of emphasis. To supplement these sources, encyclopædia articles were examined, the assumption evidently being that the amount of space devoted to a subject in an encyclopædia indicates at least roughly its relative importance. A comparison of the topics thus obtained with those found in history textbooks showed, with reference to history teaching, that

The requirements with regard to certain dates in history are not justified.

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<sup>14</sup> Rugg, H. O. *Twenty-Second Yearbook* (1923), p. 271.

Periods, rather than isolated dates, should be stressed.

Modern history should be given very much greater emphasis than early history.

Certain biographies have been neglected, while others have been over-emphasized.

There should be very much larger emphasis than there is upon social and industrial phases of history.<sup>15</sup>

*The newspaper-magazine method.* If one is to read with understanding, he must have knowledge of certain facts of geographical, civic, and historical nature. Commonly read current literature assumes this. On the other hand, considerable agreement should exist between the number of times that places, persons, and events are mentioned in newspapers and magazines and their relative importance to the reader. Current news sheets have therefore been analyzed and tabulations made of their geographical, civic, and historical references.

One of the first studies of this kind dealing with the social sciences was made by Bagley and his graduate students. Analysis of certain issues of *The Outlook* and *Literary Digest* yielded 2237 geographical references, distributed as follows:

References to facts of location, size, direction, which may be assumed to require for their understanding a knowledge of "place and location" geography.....	53.5
References to political divisions and facts of government which may be assumed to require a knowledge of "political" geography.....	25.1
References to industries, commerce, products, etc., which may be assumed to require a knowledge of "commercial" geography.....	5.8
References to people, customs, religion, etc., which may be assumed to require a knowledge of "social" geography.....	4.8
References to places as scenes of historical events, which may be assumed to require a knowledge of "historical" geography.....	1.7
Other references primarily of local or transitory interest.....	8.9

<sup>15</sup> Horn, E. *Sixteenth Yearbook* (1917), part 1, pp. 156-72. See also the *Twenty-Second Yearbook* (1923), part 2, p. 256; *Seventeenth Yearbook* (1918), part 1, pp. 81-89.

This investigation <sup>16</sup> also showed that, if one is to read intelligently the current journals, he will find occasion to apply his knowledge of the continents, countries, foreign cities, and American cities in approximately the proportions given in Table 48.

TABLE 48. FREQUENCY OF REFERENCE IN MAGAZINES TO CONTINENTS, FOREIGN CITIES, AND AMERICAN CITIES. THE MAXIMUM FREQUENCY IS REPRESENTED BY 100

CONTINENTS		COUNTRIES		FOREIGN CITIES		AMERICAN CITIES
N. America..	100	England....	100	London.....	31	New York... 100
Europe.....	73	France.....	80	Paris.....	26	Washington.. 27
Asia.....	13	Germany...	70	Berlin.....	15	Boston..... 27
Africa.....	4	Russia.....	35	Rome.....	12	Chicago..... 26
S. America..	3	Italy.....	32	Constantinople	12	Philadelphia. 20
Australia....	1	Turkey....	30	St. Petersburg	7	
		Austria....	24	Vienna.....	7	
		Spain.....	22			

In order to find the frequency of occurrence of important social and political problems in current news, Sharon analyzed two weeks' issues of each of nine important representative newspapers. As measured by the number of articles and the total amount of space devoted to them,<sup>17</sup> the most important problems are as follows:

Taxation	Employers and labor
Foreign relations	Pensions
Suffrage	Workmen's compensation
Monopoly and legislation	Conservation of natural resources
Public service commissions	Child labor
Liquor and prohibition	Miscellaneous
Money and banking	

*Analysis of political platforms.* Certain problems whose solution must occur through the machinery of government

<sup>16</sup> Bagley, W. C. *Fourteenth Yearbook* (1915), part 1, pp. 131-46. See also Pendleton, C., and Washburne, C. W. *Jour. Educ. Res.* (1923), 8: 233-38, and in the *Twenty-Second Yearbook* (1923), part 2, pp. 216-33.

<sup>17</sup> Reported by E. Horn. *Twenty-Second Yearbook* (1923), p. 242.

have, in one form or another, been for decades before the American people. In order to determine the most significant and the most persistent of these, Bassett <sup>18</sup> made a searching and scholarly analysis of the platforms of all national political parties since the first National Convention in 1832, and of certain selected State platforms. He found that all political problems could be classified under a relatively small number of major headings. These, listed according to importance for the entire period and for all political parties are:

1. Finance	8. Labor	14. Territories	20. State rights
2. Office	9. Monetary	15. Personal	21. Education
3. Foreign relations	10. Defense	rights	22. Postal system
4. Moral reform	11. Works	16. Suffrage	23. Justice
5. Immigration	12. Legislation	17. Constitution	24. Industry
6. Corporations	13. Commerce	18. Pensions	25. Health
7. Natural resources		19. Parties	

In interpreting this and other numerous tables which he compiled in the course of his study, Bassett says:

There are certain tendencies evident from a careful study of the data: the problems of strict or liberal construction of the Constitution, state rights, personal rights, etc., tend to become of less importance in political discussion; while labor, corporations, and foreign relations tend to become of more importance; still other problems like finance, commerce, and defense about hold their own; health, industry, and justice appear to be gaining in importance; all topics of discussion are fundamentally affected by the two general trends which the writer believes he discovers beneath the surface of our national life — the trend toward more efficient nationalism and toward more complete democracy, through the socialization of industry and the democratization of parties.

From all that has gone before, it is safe to assume that any course of instruction whose purpose is to prepare for intelligent suffrage through the exercise of civic judgments upon concrete problems should contain at least the following topics: finance — federal, state, municipal, and school district; office, elections, civil service,

<sup>18</sup> Bassett, B. B. *Seventeenth Yearbook* (1918), part 1, pp. 63-80.

etc., including the related topics of parties and suffrage as applied to the locality; corporations; labor; foreign relations, including relations to defence and commerce; natural resources; conservation and reclamation; monetary system — money, banking, and credit; and the present moral issues of the nation, state, and community.

Recognizing with Professor Keatinge of Oxford that grave difficulties lie in the way of any adequate treatment of politics in the public school, but likewise recognizing with him the necessity of such preparation in an increasingly democratic state, the writer believes that such instruction is feasible and necessary. The following quotation expresses his view of the need: "To any one who considers that the final decision as to policy and legislation of every kind, imperial, financial, and social, is made, theoretically at any rate, by the mass of individual voters, to any one who considers further that the number of male voters is in the near future sure to be largely increased and that probably there will be added to them a large number of female voters, there can be little doubt that an important duty of our schools is to give a training which shall enable our children, as they grow up, to take an intelligent interest in political life, and to register their votes when the time comes for them to do so in connection with some intelligible body of principles."

**Courses in the social sciences.** Geography and American history are probably the chief social science subjects taught in the seventh and eighth grades. Ancient history is still entrenched in the ninth grade, although it is meeting a strong competitor in community civics. Mediæval and modern history is still an important course, and American history serves to top off the study of history. Civics, economics, and sociology are rapidly establishing themselves.

However, it is still too early to predict what the final organization will be, for as yet insufficient investigations to determine content and placement of subject-matter have been made. College entrance requirements will probably exert a restraining influence for some time to come. The following plans are cited both for their suggestiveness and to show the trend reorganization is taking.

*The plan of the Committee of the Commission on the Re-organization of Secondary Education.* After remarking that opinion and practice vary as to the organization of the social studies in grades seven, eight, and nine, and that no one plan should be recommended as best for every case, the Committee suggests an alternative arrangement for the junior high school.<sup>19</sup> It will be noticed that the cycle method is employed.

Seventh year:

- |  |                            |
|--|----------------------------|
| (1) Geography — $\frac{1}{2}$ year.    | } These two courses may be |
| European history — $\frac{1}{2}$ year. |                            |
|  | taught in sequence, or     |
|  | parallel through the year. |

Civics — taught as a phase of the above and of other subjects, or segregated in one or two periods a week, or both.

Or, (2) European history — 1 year.

Geography — taught incidentally to, and as a factor in, the history.

Civics — taught as a phase of the above and of other subjects, or segregated in one or two periods a week, or both.

Eighth year:

- |  |                                 |
|--|---------------------------------|
| American history — $\frac{1}{2}$ year. | } These two courses may be      |
| Civics — $\frac{1}{2}$ year.           |                                 |
|  | taught in sequence, or parallel |
|  | through the year.               |

Geography — taught incidentally to, and as a factor in, the above subjects.

Ninth year:

- (1) Civics: Continuing the civics of the preceding year, but with more emphasis upon State, national, and world aspects (see pp. 25, 26) —  $\frac{1}{2}$  year.

Civics: Economic and vocational aspects (see pp. 26-29) —  $\frac{1}{2}$  year.

History: Much use made of history in relation to the topics of the above courses.

- |   |                       |
|---|-----------------------|
| Or, (2) Civics — economic and vocational. | } 1 year, in sequence |
| Economic history.                         |                       |
|   | or parallel.          |

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<sup>19</sup> *Bur. of Educ. Bull.* (1916), no. 28, pp. 15, 35.



For the senior high school the courses recommended are:

1. European history to approximately the end of the seventeenth century — 1 year. This would include ancient and oriental civilization, English history to the end of the period mentioned, and the period of American exploration.
2. European history (including English history) since approximately the end of the seventeenth century — 1 (or  $\frac{1}{2}$ ) year.
3. American history since the seventeenth century — 1 (or  $\frac{1}{2}$ ) year.
4. Problems of American democracy — 1 (or  $\frac{1}{2}$ ) year.

In the above list, the titles are sufficiently suggestive of the ground covered to make comment unnecessary except in the case of "Problems in American Democracy." It is the purpose of this course to serve as a culmination of the study of the social sciences. It should give a more definite and comprehensive knowledge of some of the vital problems of social life, thus equipping the pupil for more intelligent citizenship.

*Program for social sciences in Connecticut secondary schools.* It will be observed that the Connecticut program also contains two cycles similar in sequence. It is intended, however, that the corresponding subjects of each sequence shall be quite different in point of view, internal arrangement, and method. The essential idea is that the pupil, in each sequence, will "see first the human world as it has developed from earliest times, then come to know the history of the people of the United States, in its world setting," and that he will gain a "cross-section view of group life in all its aspects, upon which his historical and geographical knowledge of the preceding two years is constantly brought to bear."<sup>20</sup>

Seventh grade — The world, its people, and their history.

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<sup>20</sup> *A Manual of the Social Sciences for Secondary Schools.* State Board of Education, Hartford (1924), p. 10.

Eighth grade — The growth of the United States as a national community.

Ninth grade — Group life and civic problems.

Tenth grade — World history.

Eleventh grade — United States history.

Twelfth grade — General social science.

*The proposal of the Commission of the Association of Collegiate Schools of Business.* Attacking the problem of the social studies from the standpoint of business education, the Commission of the Association of Collegiate Schools of Business came to the conclusion that the junior high school is the strategic point at the present time. The Commission therefore proposed a program for grades seven, eight, and nine which it believed to be more fundamental and far reaching than the other proposals which had been made to 1922. After remarking that the unfolding of the social studies should not be too rapid to allow the student to build up an apperceptive basis for his thinking, the Commission states that:

the program suggested passes (1) from a seventh-grade discussion of *types* of social organization and some *conditioning factors* of the types, (2) through an eighth-grade survey of the *development* and practices of our modern social organization, (3) to a ninth-grade discussion of *principles* of social organization, and (4) ultimately to a senior high school discussion of social science material in somewhat more specialized terms. Such a development will contribute markedly to "giving our youth an awareness of what it means to live together in organized society, an appreciation of how we do live together, and an understanding of the conditions precedent to living together well, to the end that our youth may develop those ideals, abilities, and tendencies to act which are essential to effective participation in our society."

A summary view of the proposed junior-high-school program in the social studies follows:

Seventh grade:

1. Geographic bases of (physical environment with relation to) United States development.

2. Social science survey (types of social organization).
  - (a) Simple industry and simple society.
  - (b) The transforming effects of scientific knowledge.
3. Other studies, correlated so far as may be practical with the social-study material.

Eighth grade:

1. The opening of the world to the use of man.
2. Vocational survey, the individual's place in our social organization (presented in functional terms so that it may contribute to an understanding of *our* type of social organization).
3. Other studies, correlated so far as may be practicable with the social-study material.

Ninth grade:

1. The history of the United States (presented with "citizenship material" occupying the center of attention).
2. Principles of social organization (economic, political, social).
3. Other studies, correlated so far as may be practicable with the social-study material.
4. A general survey of business administration, elective.

The Commission <sup>21</sup> gives a "hint of the program of the senior high school." While its junior-high-school program is intended for all pupils, the following statement suggests courses for senior-high-school pupils interested primarily in the field of economics and business.

1. The financial organization of society and the manager's administration of finance.
2. The market organization of society and the manager's administration of the market.
3. The position of the worker in our society and personnel administration.
4. The evolution of our economic society. (Note that this is

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<sup>21</sup> *Social Studies in Secondary Schools*. The Commission on Correlation of Secondary and Collegiate Education, with Particular Reference to Business Education, The Association of Collegiate Schools of Business (1922), pp. 49-53, 58-59.

vastly more than a "History of Commerce" and vastly more than the typical "Industrial History.")

5. Accounting (not merely as bookkeeping but also as an instrument of control in the hands of an executive).
6. Business Law (as a manifestation of social control of business activity and as a facilitating aid of business).
7. Such *technical* courses as may be expedient. An illustration is shorthand and typewriting.
8. Theories of value and distribution.
9. Government and industry.

**Social values of literature and foreign language.** The social sciences are by no means the only subjects contributing toward the citizenship aim. Chief among the other subjects is perhaps literature. Good literature is such primarily, for its content, secondarily for its form. From folklore, myths, and simple forms of epic narrative suitable to elementary pupils, through the romantic tales of chivalry suitable to the earliest teens, to the classical works commonly regarded as suitable to senior-high-school pupils, literature contains the facts and ideals and describes the forces which have influenced thought and action. It reveals and interprets life, not solely from the standpoint of the individual, but from the standpoint of his relations to others. It is thus an agency of socialization.

Teachers of the modern foreign languages universally declare it to be a function of their instruction to lead pupils to understand and appreciate the customs and modes of life of the people whose language is being studied. They also assert that the study of a language should enable the pupils to read in the original the works of classic authors, thus preserving the original meaning and charm in expression. No one will deny that these are worthy aims. How far they are accomplished is, however, open to question.

**Method and the citizenship aim.** Classroom methods which put a premium upon participation in group activities like-

wise aid in realizing the citizenship aim. Thus in the modern school activities fostering individual effort and competition are being supplanted by those encouraging coöperative effort. In pedagogical terminology, the old question-and-answer method is being replaced by the socialized recitation.

**Citizenship training through extra-curricular activities.** One of the best reasons for the existence of extra-curricular activities, including student participation in school government, athletics, club work, etc., is the opportunities offered for training in citizenship. To insure highest values, certain principles should be followed in organizing them:

(1) Organization should be effected to take care of a real rather than an imaginary problem. Rules and regulations should be natural to the situation, not artificially imposed. It is, for example, of no advantage to pattern school government directly after city or state government, with a governor or a mayor and other state or city officials. Such organization is, moreover, a decided disadvantage, as extensive trials have shown.<sup>22</sup> Suggestions should and will be gained from these sources, but attempts should not be made to duplicate organizations formed for other purposes. Such officers should be chosen, such duties assigned to them, and such provisions made for enforcing regulations as are needed to effect the purpose of the organization.

(2) Failure to recognize the nature of pupils' spells, nine times out of ten, failure of the activity. It is necessary, in other words, to understand pupils' interests, motives, and points of view. Adult standards cannot be successfully imposed; nor is it necessary, from the standpoint of the aim of citizenship, to impose them. The best guarantee that pupils later will participate actively and intelligently in civic

<sup>22</sup> For an account of many of these plans, see Hall, G. S. *Educational Problems* (1911), vol. 2, chapter 24.

affairs is their active and intelligent participation in the coöperative management of their own affairs. Concretely, the best evidence that pupils will as adults be able to conduct meetings in approved parliamentary fashion is their ability to handle properly meetings of an athletic association or of similar organizations; the best evidence that they will later choose the right civic and political leaders is their choice of good school leaders.

(3) For extra-curricular activities to yield real values, they must be truly coöperative. This is a self-evident, often violated, principle. It is so easy to allow able pupils to do the work as well as to assume the lead, and so tedious or even difficult to see that each pupil has his share in the enterprise, that some pupils may be neglected. In any coöperative undertaking it is always well to arrange conditions so that each member of the group has something to do and is held responsible for doing it.

(4) Finally, coöperative work is not educative in the highest sense unless it puts a premium on thinking. This, in turn, necessitates facts — the raw data of the thinking process. At this point many extra-curricular activities, particularly school government and athletics, are weak. Pupils may formulate policies and render decisions — actions in themselves valuable. However, their value would be greatly enlarged if pupils' information could be supplemented and increased by appropriate study.

*Principles of organization illustrated.* The Boy Scout organization, originated by Baden-Powell in England and introduced into America in 1910, has had remarkable growth. To-day the organization includes hundreds of thousands of members and it reaches every State and practically every county in this country. An active campaign is being conducted to extend the organization so that every boy who desires to do so may become a member. That



scouting attracts boys in such large numbers is because its activities are in accord with boy nature; that it is encouraged and liberally supported by social workers, parents, and educators who understand scouting is because its activities are wholesome and educative to a very high degree.

Instinctive bases for the organization, such as gregariousness, love of adventure, migration, physical exercise and athletics, are readily seen in the spontaneous groups. Gangs are most often formed between the ages of eleven and thirteen, although they may appear at any time between ten and seventeen. While each usually exists for a definite set of activities, the primary purpose of the typical gang is to indulge in some form of physical activity. Leaders emerge, sometimes chosen for athletic prowess, but more often because of inherent qualities of leadership. Self-sacrifice, coöperation, and loyalty are demanded and willingly given by members. While these are fundamentally virtues, and with hero worship are characteristic of the age, they are often misdirected if the activities of the gang are unsupervised. In effecting a new scout organization, spontaneous gangs are frequently organized into patrols.

The Scout program builds directly upon instinctive tendencies. Baden-Powell drew heavily upon the educational methods of the Greeks, the qualities of chivalry, and the activities of the American Indians. Hikes to the open country and camping, woodcraft, symbols and signaling, first aid and life-saving, the study of animal life, chivalry, and a consideration of health comprise a host of activities so diversified that any boy may find an outlet for his activities and interests. The merit-badge system offers possibilities that are practically limitless, including as it does some sixty different subjects for intensive study, covering such widely diversified fields as photography, beekeeping, taxidermy, signaling, astronomy, sculpture.

The great aim of the Boy Scouts of America is to make every boy scout a better citizen. Before he becomes a scout, a boy must make the following promise, called the scout oath: "On my honor I will do my best to do my duty to God and country, and to obey the scout law; to help other people at all times; to keep myself physically strong, mentally awake, and morally straight." The laws which he promises to obey include trustworthiness, loyalty, helpfulness, friendliness, courtesy, kindness, obedience, cheerfulness, thriftiness, bravery, cleanliness, reverence. Specific teaching in citizenship is well illustrated in the following quotation from the *Handbook*:

Good citizenship means to the boy scout not merely the doing of things which he ought to do when he becomes a man, such as voting, keeping the law, paying his taxes, but the looking for opportunities to do good turns by safeguarding the interests of the community by the giving of himself in unselfish service to the town, city, and even the nation, of which he is a part. It means that he will seek public office when the public office needs him. It means that he will stand for the equal opportunity and justice which the Declaration of Independence and the Constitution guarantee. It means that in every duty of life he may be on the right side and loyal to the best interests of the State and Nation. By the "good turn" that he does daily as a boy scout, he is training himself for the unselfish service that our cities and land need so much.<sup>1</sup>

Through his membership in the patrol and troop the scout has an excellent opportunity for political training. Patrols and troops conduct their own meetings, and the members learn the elements of parliamentary law. Working together in groups, they realize the necessity of democratic decisions, coöperation, and individual responsibility to the group. Through their varied activities they come in contact with, and often aid in the solution of, community problems.

<sup>1</sup> From the *Boy Scouts' Handbook*. Quoted by courtesy of The Boy Scouts of America.

TOPICS FOR DISCUSSION AND INVESTIGATION

1. What are the rights and duties of a citizen of the United States?
2. Make a list of citizenship values derived from the study of the foreign languages. Could these values be attained in ways other than through language courses?
3. How may literature contribute to the citizenship aim?
4. Examine one or more of the texts in American history used in the secondary schools in your locality. How are current problems treated?
5. Upon what grounds can you require all pupils to study the social sciences?
6. Should all pupils receive identical instruction in the social sciences? What differences, if any, would you make for the various groups of pupils and for pupils in different localities?
7. What arguments support the cycle method of organizing junior- and senior-high-school courses in the social sciences? What are the defects of the method?

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## CHAPTER XVI

### EDUCATION FOR HOME MEMBERSHIP

**Industrial changes affecting family life.** In rural communities the family is an industrial unit. All the members are engaged in work of common interest. Boys work in fields and do chores, girls help with sewing, mending, cleaning, and preparation of food. Not only does the work of every member contribute to the welfare of the family as a whole, but every one understands the purpose and necessity of his own work and knows in general, if not in detail, the plans of the head of the industrial concern. Under such conditions the boy or the girl not only receives occupational training of value, but also training in habits of industry and responsibility.

The rural family of to-day is, to a considerable degree, representative of the majority of American families under conditions which existed before, or during the early decades of, the Industrial Revolution. Then the family was much more a productive unit than the present rural family, whose mode of living is determined to a great degree by economic changes which have exercised such a disruptive force upon the earlier American family. Formerly, both the village and the farm home were the centers of industry. Young people gained valuable training by being in the midst of many of the industrial trades, such as blacksmithing, lumbering, carpentry, and cabinet-making. The free land of the frontier States offered great inducements to young men, many of whom migrated westward to become the heads of families and to establish communities similar to those in which they were reared.

Modern city life, and, to a lesser degree, modern farm life,

have decreased the opportunities for industrial training which were formerly afforded by the community. Specialization in industry has reduced to factory processes the manufacture of many, if not the majority, of those articles and implements once produced by the trade crafts and by the home arts. The worker is now employed in a mill, a factory, or an office, instead of at home or in the vicinity of home. There is little need or opportunity for a boy to become acquainted with the details of his father's occupation. Chores, which were formerly so plentiful, are almost if not totally lacking. In the same way education in home arts has been reduced, although not so extensively. Much home work has, however, been made either unnecessary or avoidable by factory processes, so that it is now possible to maintain a home with a minimum of housekeeping. With sometimes both parents employed away from home, with the few demands made upon boys and girls, with commercial, civic, or club interests attracting the parents, and with the streets and commercialized amusements attracting both the children and the adults, it is little wonder that the home has become, as so many complain, a place where parental control is lacking and where the family congregate at stated intervals to eat and sleep.

*Factors affecting family solidarity.* These, however, are not the only alterations in family life resulting from changed social and economic conditions. Increasing competition has necessitated a longer period of preparatory training for some occupations which, together with higher standards of living and resultant increased costs, causes in many cases a postponement of marriage. An increasing number of women are entering the industries or the professions for a period of years prior to taking up the occupation in which some eighty-five per cent of all women finally engage, namely, home-making. And, since a large family is, under



the present system, very expensive, a result of all these factors is a smaller number of children per family.

But the most serious effect upon the American home incurred by the changes in social and economic conditions is the unstable condition of family life, which some think surpasses anything which has existed since the beginning of the Christian era.<sup>1</sup> This instability is shown by the mounting divorce rate. The ratio of divorces to marriages is one to twelve in the United States, while the total number of divorces per year exceeds the combined figures of all the countries of Europe. Instability in home life cannot exert other than a harmful influence upon children, and it is significant that a large percentage of juvenile delinquents come from broken homes, or from those in which one or both parents are dead.

*The problem of the school.* That the school should take cognizance of these problems is readily admitted, but the mode of attack is not yet clear. Most secondary schools offer more or less adequate courses in home-making, and many girls receive this training. But boys need coincident training, and both boys and girls should understand, in so far as their maturity will permit, the social function of the home and family, as well as their coöperative characteristics.

**Education for consumption.** The knowledge and practices incident to the intelligent consumption of commodities<sup>2</sup> would go far toward releasing the average American home from economic worry, promoting health, and incurring family happiness. Chief among the items of expense to be met out of income are those pertaining to food, clothing, and shelter.

<sup>1</sup> Elwood, C. A. *Sociology and Modern Social Problems* (1919), p. 147. In the opinion of some sociologists, it has not yet been shown conclusively that the divorce is inherently an evil.

<sup>2</sup> For an extended investigation of this subject, see Herap, H., *The Education of the Consumer* (1924), upon which these paragraphs are based.

*Food.* In comparison with other nations, the United States is not noted for its exemplary food habits. The dietary of the average American family is likely to be unbalanced, containing an excessive amount of meat, of which something like ninety-five per cent is beef and pork, and too little milk, vegetables, and fruit. Because of inherited customs or general ignorance, or both, we are slow to give up our preferences for more expensive foods or to use legumes and cheese as substitutes for meat. Food prejudices exist. Boston still asks for brown eggs and New York for white; yellow corn meal is preferred in the North and white in the South. Chemical analyses showing that the food values in these cases are not affected by color have not abolished these preferences.

Not only do we need to know more about food values, but we need to increase our knowledge of markets and marketing. The consumer could save perhaps thirty to fifty per cent in his purchases if he bought wholesale, or fifteen per cent if he bought at cash-and-carry stores. He pays nearly a third more for canned or package goods, and he loses when he buys bread by the loaf instead of by the pound. Ignorance of the standard containers for fruits and vegetables is likewise expensive. Further savings can be effected by home canning or storage of foods. In this country we waste food to such an extent that handling garbage becomes a profitable business. We are not disposed to exercise much diligence in keeping and checking grocery bills, while in the preparation of food we are very wasteful of fuel.

Food values, food preparation, and economical buying are not unknown topics in home economics courses. Stress upon them should not be lessened but increased, for there is no guarantee that they will be learned in the ordinary home.

*Clothing.* The standard allowance for clothing is about

twenty per cent of the budget necessary to maintain the average family. Many families spend less than the standard amount, while some spend more. Persons of moderate or low incomes would be benefited greatly from knowledge enabling them to select materials or garments of superior durability; those not forced to economize would not be without profit. To be able to select cloth or garment for durability, hygienic properties, laundering qualities, and taste, to be able to understand the significance of style, to recognize the various fabrics so that substitutes may be avoided, to be able to care for clothing — these represent the chief problems.

*Shelter.* A few basic facts will help in deciding upon the place the problem of shelter should occupy in the education of the consumer: (1) More than half of all American dwellings are rural, where the problem of overcrowding is negligible. About a fifth of the city dwellers live in tenements. Conditions are poorer in some places than in others, and the number of tenement and plural-family houses shows a tendency to increase. (2) Slightly fewer than half the total number of homes are owned by their occupants. For a large number of people, insufficiency of income makes home ownership out of the question; for many others, ownership is impossible except on a program similar to the building and loan plan. (3) Single-family houses are not a profitable investment; plural-family houses yield better returns. If the single-family standard is to be maintained, home ownership must be increased. (4) Home ownership exerts a good influence upon family life. It stimulates thrift, it minimizes or prohibits altogether many of the problems arising from apartment or tenement conditions, it is a stabilizing force in industry because it means permanence in residence. (5) If home ownership is to be increased, it will be because of a favorable attitude on the

part of the average American family and because of an understanding of the ways in which a home can be procured. About a fifth of the families in this country are now providing for themselves through some plan of partial payment analogous to the building and loan program. Those with low incomes can afford a home only when some form of aid is extended. The Federal Government has been considering whether or not it shall embark on a scheme of aid in home-building as has been done in England, France, and other countries, and as was tried in the United States to a limited extent during the War.

Whether the individual owns or rents, he should know how to judge real estate values. He should know something of the cost of land, building material, and labor which go with construction. He should be informed upon tax rates, amounts needed for repairs and insurance, and sanitary and hygienic conditions. If he is an owner or prospective owner he will be inclined to do more or less investigation to arrive at these facts; if he is a tenant, such knowledge will give a basis of judging the worth of what he is paying for.

The average person perhaps knows less about the materials that enter into the construction of carpets, furniture, and general household utensils than he does about the materials that enter into the construction of a house. Statistics show that we buy furniture of poor quality, which is wasteful in the end. We do not often buy imitation leather in shoes, but we are not able to identify good shoes except by the price asked, and, for the genuine article, we buy split leather or cloth, which has been treated with several coatings of celluloid and impressed with the grain of leather. In other instances we are unable to identify the imitation from the real even when little attempt is made to hide the imitation.

**Factors common to the education of both sexes.** Among

the many factors affecting worthy home membership, some are common to the education of both boys and girls. These will be briefly enumerated.

(1) The first is the problem of vocation. This involves educational guidance, and the important steps of selection, of preparation for, entrance upon, and progress in vocation. Home life does not depend for entire completeness upon the breadwinner's satisfaction in his work, but plainly it is conditioned by it.

(2) Successful home life depends upon wise expenditure of funds. Budgeting the income and the application of business-like methods to the financial affairs of the home are topics now receiving considerable emphasis. Boys as well as girls need training along these lines. In order to ingrain desirable habits, coöperation with the home is needed, so that pupils may participate in home budgeting and understand the processes involved or may budget their own funds.

(3) Salaried jobs are much more frequent than formerly, due to increasing urban population and to concentration of wealth both in industry and agriculture. The home that escapes periods of financial stringency is one where a systematic plan of saving is in operation against the proverbial rainy day. Protection against accident, calamity, and impoverishment of family through death is possible only through some form of insurance. Boys and girls should, for best educational results, be familiar with methods of saving and with commoner forms of insurance. For most effective training they should be able to practice, on their own accounts, some of the forms of saving; they should also have first-hand acquaintance with insurance.

(4) Good health is a great contributor to family welfare. In another connection it is shown that the average family loses a considerable amount each year through preventable

ill health. Good health, on the other hand, prevents these interruptions in the yearly income. Misery and suffering occasioned through preventable sickness are none the less real, and their eradication would prove one of the greatest blessings to American family life.

(5) Common interests in leisure pursuits are not inconsiderable in family pleasure. It is, of course, too much to expect education to bring about a condition wherein all would enjoy the same things; it is not desirable that such should be attempted. If, however, individuals are interested in, not one, but a wide range of leisure activities, it will be easier for members of a family to find a common ground of enjoyment, and it will be easier for them to establish social contacts with their neighbors. Some of these interests should, for the sake of health as well as for the sake of the younger members of the household, be in games and outdoor life.

(6) Each boy or girl should learn to adjust himself or herself to the habits of the household and to feel his or her responsibility as a member of the family circle. Such attitudes cannot be attained so much by precept as by example. If coöperation and cordial relationships exist between teachers and students, and if the spirit of teamwork, fair play, and mutual helpfulness pervade the school, certainly the influence upon home life will not be negative. How far the school attitudes will transfer we can only hazard; if, however, parents and teachers understand each others' purposes and methods, there is greater chance that the pupil will come to recognize the "elements" identical to school and home situations.

(7) A score of years or more ago, agitation began in favor of offering in high school studies dealing with efficient parenthood. A body of well established facts and principles was available respecting the native tendencies, social needs,



physical growth, and mental development of children, which has since been enormously increased. It was pointed out that, while courses in child psychology flourished in normal schools and to a certain extent in colleges, classes contained but little which pertained specifically to parenthood. The fact that most persons were deprived of even this instruction through non-attendance upon college was not overlooked. The proposition to provide courses on parenthood was countered by the assertion that high-school pupils manifested no interest in them, and would probably not pursue them if they were offered.<sup>3</sup> However, the condition under which prospective parents, willingly or unwillingly, escaped acquaintance with the problems of parenthood was recognized as one to be deplored.

Little mothers' classes in the elementary school, where girls are taught the duties of motherhood, and certain home economics work in secondary school and college, are proof of the statement that the duties of parenthood can form a part of the body of school instruction for girls. There is no reason for rejecting, out of hand, the proposition to provide similar instruction for boys. It is not clear how such work is to be organized; doubtless a course entitled "Parenthood" would receive few applicants. The experiment of expanding hygiene and the social sciences to include certain facts relative to child growth and nutrition, the prevalence and effects of malnutrition, city regulations for protection of children, and other phases of child welfare, would be well worth trying. A boy might conceivably be interested in comparing his play habits with those of a child half his age, or his physical measurements and proportions with those of younger children. He might not turn a deaf ear to a request to instruct small boys in how to play a game; he could

<sup>3</sup> *Cyclopedia of Education* (1913); article entitled "Education for Parenthood."

be depended upon to protect young children from the teasing and fighting instincts of older children. All this would be a step in the right direction, to be followed by further organization and development.

The above constitute a part of the desirable and necessary training in worthy home membership. It is evident that this training as yet will not be arranged in a course of that designation, but will be part of several other courses. This is in itself not unfortunate; it may, indeed, be the most desirable arrangement. There should, however, be definite study and analysis of the knowledge, skills, and aptitudes constituting worthy home membership; present courses and activities should be examined to see what each contains or may be made to contain to help achieve the aim. Finally, the whole should be correlated in an effective manner.

**Social intermingling of the sexes.** Love of amusement and mutual attraction of the sexes, characteristic of young persons during the senior-high-school period and the years immediately following, are at the same time sources of difficult administrative problems and valuable educational opportunities. Principals and superintendents realize that young people will not be deprived of group amusements, and that it is better that such affairs occur under the auspices of the school than under other auspices; but as a rule they do not yet realize the educational opportunities which are theirs. Wholesome friendships should be formed between boys and girls, proper habits of decorum inculcated, and, above all, high ideals established. Desirable friendships, good manners, and high ideals are not always the outcome of the association of boys and girls; there is, however, no substitute for the social intermingling of the sexes for forming them. The importance they bear to the problem of this chapter should be obvious. Selection of a life partner

— the most important step in life and the most influential as regards the long period of home membership — is conditioned more than is commonly realized upon friendships, habits, and ideals that boys and girls form in their association with each other.

*Social dancing.* If school authorities are to have a hand in administering social affairs, they should first learn the attitude of the community regarding this question. If criticism has been directed against former practices, or if a negative attitude is taken by parents, it is difficult to organize an effective program. Sometimes it is best for school authorities to postpone announcement of a policy until the general sentiment of the community is understood. These remarks apply with especial force to social dancing.

In the typical senior high school more boys and girls are interested in dancing than in any other form of amusement; and there are hundreds, perhaps thousands, of communities, where sentiment is so divided that "high-school" dances, particularly if held in school buildings, will cause a storm of protest. This is a situation demanding great tact and prudence on the part of the administrator and the committee in charge of social affairs. Even though this problem is not found, care is needed to see to it that dances are properly managed and that pupils gain desirable training.

*Other forms of social entertainment.* Some realize with difficulty that not all persons dance and that many students will be neglected if the school fosters no forms of social entertainment other than dances. That the majority of pupils will not attend "parties" because they are not interesting is a complaint frequently heard. This condition can be overcome if the high-school principal and social committee are active. Moreover, it is their duty to stimulate interest in forms of amusement other than dancing. To accomplish this may call for ingenuity; the problem

should not, however, be evaded for this reason. Talent in music or dramatics, and ability along literary lines are available in practically every community. Games appealing to mixed groups are not unknown. The dance should not be the only possible social function.

**Courses for girls.** Curricula in home economics, the first purpose of which is the training of girls for helpful and worthy home membership in their present and in their future homes, are found in more than half the public high schools in the United States. In common with many other curricula and courses, home economics instruction has experienced great development. It has also been subject to criticisms, the most important of which should be examined briefly.

Home economics instruction has been justly criticized for lack of articulation with the homes from which pupils come. Teachers entering new communities have not acquainted themselves with individual students, often because their work has been too heavy to permit extensive visiting and experimentation, but sometimes apparently because they were lacking in point of view or disposition. Whatever the cause, classes have been equipped with apparatus of an entirely different sort from that found in the homes of the pupils, while the dishes prepared in cooking classes, or the work done in sewing, have likewise been poorly adapted.

Flexibility in arrangement of work has too often been wanting. The amount of home training in the arts of housewifery varies greatly, yet girls who have learned dexterity in sewing or skill in food preparation are placed side by side with those with no skill or dexterity whatever. Both groups have too often been required to prepare foods in portions so small as to be unusable in any family, or to sew according to arrangements standard only in sewing classes.

Heretofore aims have been too narrow and content too

limited. On this point the sub-committee of the Commission on the Reorganization of Secondary Education says:

Whatever the causes in any particular place, the result too often has been a limitation to cookery or sewing or both of these, to the exclusion of all other subject-matter relating to home economics. In such cases home economics has followed the lines of least resistance and not the lines of greatest value in the life of the student. The volume of knowledge affecting home conditions has increased so rapidly that it is difficult to select the most important information for courses of study. When such selection has been made, it should be subjected at frequent intervals to criticism, reorganization, and readjustment to changing conditions. Especially should home economics instruction be much broader in scope, in order that the girls' interests may be related to home and community.<sup>4</sup>

*Required vs. elective home economics courses.* Home economics courses are not required in the senior high school, and some disagreement exists on the question of requiring them in the junior high school. The friends of the subject point out that since the average girl sooner or later manages her own home, training in the home arts represents, more perhaps than any other work which the school can offer, training of practical importance to girls. In the second place, some two fifths of girls and women engaged in wage earning are employed in processes having to do with food and textiles. For these, home economics will be of considerable vocational value. Finally, the girl will find home economics of great benefit during the period of wage earning. She must maintain her health, clothe herself properly, and know food values if she is to be an efficient worker. All these are part and parcel of the work in home economics.

The impractical nature of home economics courses can be urged as a temporary, although not as a permanent, objection to the subject as a requirement. Leaders in home

<sup>4</sup> *Reorganization of Home Economics.* Bur. of Educ. Bull. (1922), no. 5, p. 3.

economics education recognize the shortcomings of the courses and are setting about the task of remedying them. All this work is relatively new, and time is necessary for complete organization. The objection that definite skills cannot be taught does not appear to be a valid reason for placing the subject on the elective list. This is to assume that dexterity and skill in execution are the fundamental aims of home economics, whereas they are really subsidiary to the more general aim of securing and maintaining the best type of home and family life. Skill in food preparation and with textiles is only a part of the necessary training.

It should be stated, in this connection, that the type of high-school instruction in foods and clothing has recently been sharply modified. Especially in advanced foods classes cooking processes receive less stress than formerly, and nutrition and dietetics are given greater emphasis. Greater stress is also being placed upon the economics of clothing and less upon the technique of garment making. There has emerged, moreover, a tendency to abandon the old formal types of teaching and to adopt the socialized recitation, as well as to adjust courses to actual economic and social conditions.<sup>5</sup>

It may be argued with considerable force that secondary home economics cannot really be vocational. Training unused for three or more years deteriorates so that, even were the girl capable of managing a home at the time she finished high school, it is expecting the impossible to think she can maintain her skill without practice for so long a time. Again, it is doubtful whether girls fourteen to eighteen years of age are really motivated by home economics courses as they are, for example, by commercial work. Application of the former seems vague and far away; use for stenography and typewriting, on the other hand, seems immediate, for

<sup>5</sup> Biennial Survey of Education; *Bur. of Educ.* (1920-22), vol. 1, p. 375.



there is definite expectation of using them in earning a living. This may account for the small proportionate enrollment in home economics. About one girl in twelve enrolls in the home economics curriculum; something like a third of all girls in the secondary schools enroll in commercial work.

If home economics courses are so planned as to stress physical and intellectual development, to give a reasonable degree of skill in daily tasks, and above all, to improve the daily lives of pupils and to lead them to coöperate more willingly and effectively in the affairs of their own families, it seems that they might well be required in the junior high school. As it is, girls are held for some work (as, for example, ninth-grade algebra) whose values there is every reason to believe are, for them, inferior to the values of home economics. But in the senior high school home economics cannot, for obvious reasons, be required. However, a system of free electives permits pursuit of the subject by those so inclined. Many administrators feel justified in making home economics strongly advised.

**Content and arrangement of home economics courses.** Statistics of elimination indicate that there are two broad classes of girls for whom training in home economics should be provided. One class is comprised of girls who will leave school at an early age; the other constitutes those who will continue their education perhaps to the twelfth grade or beyond.

*For over-age girls.* If the principle of admitting to the secondary school and there providing suitable instruction "for all pupils who are in any respect so mature that they would derive more benefit from the secondary school than from the elementary school" is observed, practically all retarded girls fourteen to sixteen years of age will be found in the junior high school. The work recommended for these

pupils who are interested in home economics is outlined as follows:

In every school system of considerable size there are many retarded girls for whom intensive half-time home economics courses are essential. These girls may be foreign born or from foreign homes with so limited a knowledge of English that they have failed to progress as rapidly as their schoolmates. They may have been overburdened with the responsibility of the care of younger children. They may be subnormal as well as retarded. The classroom work no longer holds their attention. The correlation of that in which they are interested with the abstract studies enlivens the latter. The concrete instruction appeals to the foreign parent who is willing that the school life continue where this intensive instruction is offered. Usually these over-age, under-grade girls do take an active part in the home, in the care of the younger children, in the actual labor of the household. In general, the marrying age among these girls is early; they frequently become household workers for wages; they often early assume the care of the household for the working mother; and they compose a considerable percentage of all girls and women in the nation.

Courses of this type should be taught during the usual school hours. The courses should be one year in duration, though local conditions should determine when a second year is desirable. It is best that these courses be taught in high-school buildings, because of the fact that these girls are of high-school age and find an added incentive in the opportunity to associate with others of like ages.

In order to give the extended training in the technique of food preparation that this type of student should have, it may be well to conduct a tea room and to contract for sales of cooked foods.

The sewing in intensive home economics should be done by hand, foot-power, and electric-power machines. The garments selected should be those needed by the student herself and the members of her own family, though as the instruction progresses, garments for benevolent organizations and community projects may be produced. Speed, accuracy, and good workmanship should be secured. Mending, making over, and dyeing should be thoroughly taught. The use of pieces of materials in children's garments, quilts, and rugs should be advocated and throughout this clothing course the proper cleaning and laundering of each kind of material and type of garment should be taught.

The project method should be used. Parallel with instruction in technique should be the teaching of the economic value of the fabric chosen, the hygienic qualities of the material, the sanitary care of the same, the suitability of the cloth, color, and design to the purpose for which the garment is intended, and the appropriateness of the chosen pattern and material to the proposed wearer of the completed garment. Repetition is necessary for increase in skill, hence the projects chosen should repeat the lessons taught in previous projects but should also build upon and extend the knowledge and skill acquired in the earlier projects.

Clothing and textile work gives an opportunity to teach the purchase, making, and care of household linens, draperies, bedding, etc.

A yearly sale of the household supplies, prepared for the practice course, affords an opportunity to teach to each succeeding class the lessons of household furnishing.<sup>6</sup>

*For girls who expect to continue their education.* For the second group, the work should be more general in nature. In the junior high school it usually centers upon care, selection, construction, and economy in clothing, its laundering and renovation; and preparation and service of foods, their preservation, marketing, food values, and costs. There is the possibility of relating much of the work in general science, the social studies, hygiene, mathematics, drawing and art to home economics. Ninth-grade courses, which have been preceded by work in the seventh and eighth grades and in the elementary school, are sometimes sufficiently comprehensive to include family and personal finances, the sanitary home, first aid, care of the sick, and child care.

In the senior high school, where the home economics curriculum is usually planned to consume about one fourth of the pupil's time, the same topics are pursued in a broader and at the same time in a more intensive manner. Economic aspects of foods and clothing, home construction,

<sup>6</sup> *Bur. of Educ. Bull.* (1922), no. 5, pp. 30-31.

household decoration, furnishing, and sanitation represent the method of attack. Household administration, and often the care of children, are also stressed.

The content of the home economics curriculum outlined above is perhaps more comprehensive than found in many high schools. A reason for this is that topics formerly taught in college are pushing downward into the senior high school, while materials formerly found in the senior high school are being carried into the junior high school and even into the grades. The whole process of rearrangement of content is incomplete. Considerable overlapping, especially between the senior high school and the college, now exists.

**Girls' organizations and training in home arts.** Two of the best-known organizations for girls whose activities contribute to home training are the Camp Fire Girls and the Girl Scouts. The latter is a sister organization of the Boy Scouts, and has practically the same oath, laws, and organization. Many of its activities are very similar to those of the Boy Scouts, although modifications occur in order better to take account of the nature and interests of girls. The home arts are stressed, and it is interesting to note that the first six activities in which proficiency badges recently were earned were, in order, home nursing, laundering, first aid, needlework, child nursing, cooking. Of the forty-odd subjects for which proficiency badges are given, more than one fourth are in subjects directly related to the services of woman in the home as mother, nurse, or home-keeper. Every effort is made to infuse the spirit of play into the simplest and most repetitious of household tasks, and to prepare the girl for a fuller individual life in both social and personal relations.

Founded by Mr. and Mrs. L. H. Gulick in 1912, the Camp Fire membership now consists of tens of thousands of girls

in eight thousand or more camps scattered throughout the United States and a dozen foreign countries. The fundamental idea back of the organization is to "foster the personal relation of mother to daughter, to cultivate the closest intimacy between them, and to magnify the home as the sacred center of their relations." Work and the spirit of comradeship are emphasized as a primary condition of happiness; health is shown to be a personal duty and an essential to success in any field. The activities of this organization are manifold. Under its seven crafts — home, health, camp, hand, nature, business, patriotism — nearly a thousand specific suggestions are tabulated, each opening some avenue of distinct, purposeful, and helpful endeavor for girls.

**Courses for boys.** Courses for boys planned to further the end of worthy home membership are practically nonexistent. While there are many activities of an extra-curricular nature and numerous topics scattered throughout the various courses which together comprise no inconsiderable body of material pertaining to the home, the general aim suffers through lack of coördination of these diverse activities and topics. More important, the teachers handling them are not motivated, except in the rarest instances, by the aim of worthy home membership.

*Applied science.* The material contained in the outline below was entitled "applied science" by its originators<sup>7</sup> to forestall a possible negative reaction on the part of boys to the same content were it designated as a course in home membership. The material could well be contained in a single course; on the other hand, nothing prevents its distribution among several courses.

<sup>7</sup> Adapted from *Home Economics Circular*, no. 16 (1922), Bureau of Education.

## ELEMENTARY NUTRITION AND CAMP COOKERY

## CLASSROOM WORK

1. Eating for strength and growth: function of various food stuffs
2. Amount of food needed
3. Why food is cooked
4. How food was cooked by Indians, early settlers. Camp cookery a combination of all these
5. Characteristics of foods — milk, vegetables, meats, eggs, etc.
6. Suitable foods for
  - a. Camp life
  - b. An active boy
7. Faulty habits in eating
8. Sanitation of food in camp, home, stores, and markets
9. Preservation of food in camp, home, commercial concerns  
Tests for adulterants

## LABORATORY WORK

1. Appliances for cooking
  - a. The camp fire and the kitchen range
  - b. Cooking utensils and their care
2. Practical methods of cooking
  - a. By direct heat — baked potatoes, toast, etc.
  - b. By hot water — fruit, potatoes, meat
  - c. By steam — rice, beef, etc.
3. Special camp dishes
4. Foods requested by class: home meal service
5. Camp work: packing food, transporting, protecting, open-fire cooking, camp dish washing, camp sanitation

## CLOTHING

1. Choice of clothing
  - a. Materials used in suits: qualities to be looked for, common deceptions, color, wear, recognition of woolen cloth
  - b. Materials used in shirts, underclothing, socks: wool, silk, cotton, wearing qualities
  - c. Kinds and wearing qualities of different leathers used in shoes
2. Care of clothing
  - a. Cleaning and pressing
  - b. Sewing on athletic stuff: mending baseball glove, sweater, sewing on buttons and insignia, washing sweaters and athletic suits, minor repairs to shoes
  - c. Methods of preserving shape and appearance of garments

## FIRST AID

1. Burns, bruises, punctures, cuts, fractures, sprains, dislocations, fainting, unconsciousness from injuries, drowning, ivy poison, bites of insects, reptiles and dogs
2. Instruction in giving first care to the sick
3. Ability to recognize a fever, relieve a headache, observe pulse and breathing, prepare a hot-water bottle or simple beverage



## SANITATION

## CLASSROOM WORK

1. Heating a dwelling
  - a. By stoves, fireplaces, hot-air furnaces, steam and hot water
  - b. Relation of moisture to sensation of warmth
  - c. Fuel: kinds, costs, fuel saving
2. Adequate ventilation
3. Sanitary plumbing devices
4. The spread of disease
5. Disposal of waste: household, city garbage, sewerage
6. City water supply: sanitation of swimming pools
7. Disease carriers: human beings, insects, rodents
8. Relation of household cleanliness to health
9. Composition and uses of various paints, varnishes, oils, and waxes used in the household

## SHOP WORK

1. Visits to residences under construction
2. Heating
  - a. Visits to hardware stores with studies of heating apparatus
  - b. Fuel samples and prices
  - c. Building and caring for a furnace fire
  - d. Covering heat pipes, cleaning water heater
3. Plumbing repair: taps, sink, pipe-fitting, thawing frozen pipes
4. Cutting off water, gas, electricity, reading meters
5. Electrical repairs: telephone, bell, iron or toaster, inserting fuses, elementary wiring
6. Visits: city waterworks, sewage plant, stores and markets, plumbing establishments
7. Refinishing with paints, varnish, oil, and wax
8. General repairs

## COST OF LIVING

## CLASSROOM WORK

1. The income
  - a. Average income for different occupations
  - b. Budgeting average home and personal share of boy
2. Investment of savings
3. Banking, mortgages, loans
4. Conditions affecting cost of living
  - a. Foods: production, transportation, storage, distribution, charge accounts, delivery, attractiveness of package
  - b. Clothing, shelter, transportation

## LABORATORY WORK

1. Simplified personal and household accounting
2. Visits to banks: practice in writing checks, deposit slips, etc.
3. Visits to cash-and-carry stores, credit-and-delivery stores, public markets
4. Visits to cold storage plants
5. Visits to installment-plan stores
6. Compilation of price lists

## PERSONAL HEALTH

1. Health and disease definitions
2. Causes of disease: external, internal
3. Ingress of microorganisms, skin, digestive tract, respiratory tract, reproductive organs
4. Protection from diseases caused by microorganisms: cleanliness, personal care, etc.
5. Bodily resistance to disease, natural and acquired immunity
6. Common infections and common carriers of infection
7. Personal care of hands, feet, skin, hair, and teeth
8. Personal habits
9. Proper conditions for sleep
10. Care of excretory organs
11. Hygienic clothing
12. Mental effect upon physical well-being

"*Valet*" clubs. Occasionally some of the above activities are carried on in one or more of the school clubs. A "valet" club, found in some of the Pittsburgh high schools, is sponsored by a teacher of home economics. The aim is to encourage boys to take pride in personal appearance, to promote thrift, and to teach how to repair and care for clothing.<sup>8</sup> Some of the activities are as follows:

Freshening and making over old ties  
 Mending sweaters  
 Darning socks  
 Sewing on buttons  
 Pressing suits  
 Removing spots  
 Applying mending tissue and tailor's gum to patching  
 Washing, drying, and pressing trousers  
 Mending frayed shirt cuffs  
 Washing and ironing shirts  
 Simple cooking

*Home repair.* The purposes of manual arts courses in home repair are, as the title connotes, skill in handling tools and performing operations required in the numerous repair jobs found in the average home. Really to be a handy boy

<sup>8</sup> Foster, C. R. *Extra-Curricular Activities in the High School* (1925), p. 43.

or man about the house is to contribute to family welfare and comfort. Courses in home repair are now receiving well-merited attention.

The results of an investigation undertaken to determine the problems and processes which would be involved in a manual arts course if it were based upon the work to be done around the home are presented in Table 49. The method of the investigation was, briefly, to have different individuals check, on rather a comprehensive list, items of repair which needed attention or which had lately received attention. The repair jobs were analyzed for the tool processes they contained and the frequency with which each was used. Many processes were discovered which are not included in the ordinary manual arts course. The conclusion was that if home repair construction is to be made the basis of a course in manual arts, sufficient mastery of these tool processes should be given.

**Parent-teacher associations.** For a long time kindergarten teachers have, as a part of their regular work, visited the homes of the children under their tutelage. The purpose of this visitation was originally to acquaint teachers with the home conditions of children so that their instruction might yield higher values. To this function is now added the purposes of aiding, especially in metropolitan areas, the work in Americanization and of improving general home conditions. Occasionally one hears of a secondary school where teachers visit the homes of their pupils; the custom is so infrequently found, however, as to be practically non-existent.

Parent-teacher associations, now found everywhere, are the substitute for visitation. Through them teachers and parents become acquainted; here they discuss their common problems. Parents learn of the work the school is attempting to do, and parents and teachers often join to form

TABLE 49. MANUAL ARTS BASED UPON HOME REPAIR. THE 54 JOBS WITH A FREQUENCY OF MENTION OF 150 OR OVER, CLASSIFIED ACCORDING TO TYPE <sup>9</sup>

RANK	FRE- QUENCY	JOB	RANK	FRE- QUENCY	JOB
		<i>Painting</i>			<i>Put Handle in Tools</i>
1	271	Paint house	36	169	Rake
5	222	Paint floors	39	163	Hammer
7	219	Paint screens	41	161	Axe
9	211	Paint outbuildings	50	152	Hatchet
13	197	Paint interior woodwork			
11	208	Varnish furniture			<i>Sharpen tools</i>
43	157	Varnish woodwork	2	253	Knives
45	156	Varnish floors	4	224	Scissors
27	183	Polish furniture	9	211	Skates
48	154	Clean and oil furniture	14	195	Axe
31	176	Wax floors	49	153	Lawn mower
		<i>Furniture Repair</i>			<i>Plumbing</i>
7	219	Tighten screws in furni- ture	31	176	Stop leaks in faucets
16	194	Put knob on door	41	161	Thaw frozen pipes
33	171	Tighten belt on sewing machine	48	154	Clean oil stove
36	169	Clean and adjust sewing machine	4	224	<i>General repair</i>
52	151	Reseat chair	11	208	Put up clothes line
		<i>Screen repair</i>	16	194	Paper room
12	198	Make fly swatter	18	193	Mend locks
16	194	Put new wire on old frames	20	190	Re-putty glass
24	188	Put new screen on screen door	20	190	Build fence
26	184	Rehang screen door	20	190	Hang shades
37	167	Put new hook on screen door	23	189	Plane tight door
45	156	Screen in porch	23	189	Stop rat holes
45	156	Hang window screens	26	184	Build chicken coop
52	151	Mend torn screen wire	28	182	Make hen's nest
			29	177	Fit and lay linoleum
			32	172	Make swing
			34	170	Put shelves in closet
			38	165	Make sled
			41	161	Set fence posts
			52	151	Mend window shades
			54	150	Set glass
					Make yard gate

Table to be read as follows: Painting the house ranked first in frequency and was mentioned 271 times on 430 blanks.

The eleven highest frequencies were: Painting the house (271); sharpening knives (253); sharpening scissors (224); putting up clothes lines (224); painting floors (222); painting screens (219); tightening screws in furniture (219); painting outbuildings (211); sharpening skates (211); varnishing furniture (208); and papering rooms (208).

<sup>9</sup> Fuller, L. R. *Jour. Educ. Res.* (1921), 3 : 173-79.

an audience for an educational speaker. First organized through the initiative of teachers, parent-teacher associations now have sufficient stability to insure their permanency.

### TOPICS FOR DISCUSSION AND INVESTIGATION

1. How do you account for the scarcity of literature dealing with education for home membership?
2. How would teachers, parents, and pupils react towards a course entitled "education for parenthood"? What should be the content of such a course?
3. How does the subject or field of your major interest contribute to worthy home membership?
4. Examine the courses in the program of studies of a typical secondary school, tabulating the topics contributing toward home membership. Suggest changes and additions.
5. Compare the home life of a typical family in colonial New England, in a Southern State, and in a Northern State just before the Civil War. Make other comparisons of a similar nature.
6. Describe the organization and work of a Parent-Teachers' Association with which you are familiar. What are its accomplishments with respect to the realization of the aim of worthy home membership?
7. Would you favor a required course for boys in "manual arts based on home repair"?
8. What would be the advantages and disadvantages in requiring high-school teachers to visit the homes of their pupils?
9. Is it true that the average age at which women marry is higher now than formerly? (See the *Fourteenth Census*, 1920, vol. 2, pp. 386-87.)

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## CHAPTER XVII

### MORAL TRAINING

**Morality as an educational aim.** There are many who would make moral character the ultimate aim of all education, and certainly an education not moral in its influence could not long endure. When morality is defined in terms of social welfare, the moral aim becomes almost synonymous with social efficiency, which has been put forward along with individual development as an educational aim. As the terms are commonly used, however, "moral" refers to a smaller number of social acts than does the term "social efficiency." Nor, when a man is pronounced socially efficient, is it clearly connoted that he is moral. The objectives of secondary education are clarified and definitized when moral or ethical character is given a place in the classification along with education for citizenship, worthy home membership, vocation, fundamental processes, health, and leisure.

**Meaning of "morality."** Morality has been defined as the "intelligent choice by the individual of habits of action for the good of the group." This definition permits indefinite analysis. Attention will be directed here to three important implications: the social aspect of morality, the element of choice, and the disposition to act.

*Social aspect of morality.* In the first place, one's moral character is the sum of his ideals and of his specific acts judged by the standard of right and wrong. The ideal of service now permeating business, for example, assumes completeness and becomes meaningful when we think of it in connection with the thousand and one ways in which service

is appearing. We are becoming accustomed to the commercial establishment which is really desirous of satisfying the customer, to the courteous salesperson whose disposition prompts him to be of assistance to the buyer when selecting an article, to rest-rooms in charge of competent assistants, and to similar conveniences which are regarded as forms of service. The moral quality of service is incomplete in so far as certain practices are unleavened by the ideal; business practices as a whole are immoral in so far as they fall short of the ideal of service and similar accepted ideals. It is the same with the individual, whose moral character is the total of his ideals and actions.

The statement that morality is social in nature requires but little elaboration. The word is derived from *mores*, meaning customs. A little reflection will suffice to show the worth of practically every human action to be determined by the way it affects the social group. Acts judged moral at one period of history have been otherwise regarded at a later time, and behavior which elicits no criticism under one set of conditions becomes immoral under another. Though one may be inclined to disagree with the pragmatic view of morals; he will find the contribution his acts make to the welfare of others a workable basis for judging their worth.

*Morality involves choice.* To choose means to adopt one course of action in preference to others. There is always more than one alternative, and as choice becomes more intelligent the number of alternatives increases. An individual lives, let us say, in a mountainous district apart from neighbors. His methods of garbage disposal will be based upon matters of convenience and his own personal habits of orderliness and cleanliness. He removes to a city, with no additional knowledge of the various factors involved. His actions in this particular respect cannot be as moral as when he learns something of the way in which disease is spread,

that the proximity of other people must govern his actions more than formerly, and that a city's rules and regulations apply to all. For education to be moral, then, it must supply a wide background of experiences, so that one is not unduly limited in the number of suggestions presenting themselves when a problem is met.

*The will must act.* Every one knows that he who has the greatest fund of information at his disposal is not always the one who can be counted upon when it comes to action. The desires of the individual referred to above may be at variance with the right line of action. Again, one may procrastinate, and end by going no farther than a mere mental selection, rather than a real choice, of the proper action. Intelligent choice, therefore, includes not only knowledge; it includes also the will to do. Hence the development of the will becomes an important part of moral training.

As Sisson remarks, growth and development of will come through the exercise of the will, and in no other way. The exercise of the will, he further states,<sup>1</sup> "demands a task or a problem, and the exercise of my will demands that I should have a problem." That type of education which leaves no decisions to the student but exacts more or less unquestioning obedience to directions does not cultivate moral fiber. Similarly, that attitude on the part of the student which leads him to get his lessons because they have been assigned rather than because he is vitally interested in them results in moral flabbiness rather than strength. Moral training takes place only when conditions are so arranged that young people can assimilate a rich background of knowledge relating to problems, and when they are given at least reasonable independence in reaching and acting upon their decisions.

<sup>1</sup> *Principles of Secondary Education* (edited by Paul Monroe, 1914), p. 317.

**Classification of problems of youth.** It is not to be inferred that the youth understands his own problems, nor that the task of the teacher is merely that of directing the energies of a boy at work upon a problem which he clearly recognizes and whose significance impresses him. On the contrary, a great part of the task of one who would induce moral training consists, first of all, in understanding the real problems of boys and girls, and second, in making these clear-cut and definite in the minds of those he would teach. As stated in a preceding chapter, the sources of knowledge of childhood and adolescence are the scientific studies of these periods, the literature produced by certain literary writers, one's own remembrances, and observation of boys and girls themselves. A teacher's ability to assist a pupil to realize his own problems will be immeasurably strengthened through sympathetic personal contact. So important is this last factor that it is doubtful if much influence can be exerted when it is absent.

In a very enlightening analysis, Sisson has grouped the problems of youth under five major divisions:<sup>2</sup>

The first is the discovery and perfection of the Self, both individual and social, which, in its broad sense, evidently includes all other possible problems; next amusement, recreation, "fun," in a vast variety of forms; then two that belong peculiarly to adolescence: first, relation to the other sex, involving sexual life itself, love, marriage, and family; then vocation and economic success, rising into the ideal of a life career. The fifth great choice is a religion, not at all in the theological but in the ethical sense—something which dominates the whole hierarchy of will, forms the object of supreme desire, and so assimilates to itself all other motives. These great questions are being asked more or less definitely by young people everywhere; nowhere, it is natural to suppose, more than in high schools. They may be put into words

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<sup>2</sup> From *Principles of Secondary Education* (edited by Paul Monroe, 1914), p. 326. Reprinted by permission of The Macmillan Company, publishers.

somewhat thus: (1) "What sort of person am I going to be?" (2) "How am I going to find my amusement, spend my leisure time?" (3) "What attitude am I going to take toward women (or men)?" (4) "What shall I do for a living?" or more naively, "How am I going to make money?" and finally, though far less likely to take any definite or even conscious form, (5) "What am I going to put above everything else? What am I going to serve with all my heart?"

*The realization of the self.* In a more or less vague way, the boy desires to be a man among men, to reach the highest possible stage of perfection. The development of physical strength, symmetry, and muscular skill plays a large part in his ideal of perfection. In a lesser degree, seemingly, is the desire for intellectual development present. Yet it is possible that the difference between the concern for the physical and for the mental could be overcome to a great extent if we insisted less upon the performance of set tasks and the gaining of marks, and if we tried harder to give direction and meaning to the vague desire for intellectual improvement undoubtedly present in the mind of the average boy or girl. Certainly ideals of courage, loyalty, chivalry, and honesty are a part of the more general impulse toward self-realization.

*Vocation.* Tables showing how many boys chose this and how many girls that occupation, and cut-and-dried methods of guidance which unhappily prevail in some secondary schools, give little idea of the amount of serious thought the average boy or girl entertains with respect to his or her vocation. When his confidence is gained so that he talks freely, it will be seen that the pupil is trying to analyze his own capabilities to see where he can best fit into the industrial or professional world. Being something of an egoist, he naturally hopes to fill a place of some prominence. But his egoistic tendencies do not control him completely, and he mixes

them with an ambition to benefit society. His mercenary qualities are not over-strong, for financial returns play a less important part in his vocational decision than his estimate of his abilities. If his school work agrees with his vocational decision, even though the latter be tentative, he will work harder, as any one knows who has compared the attitude of the liberal arts students with that of professional students. It is not too much to say that vocational courses are at least partially justified by the increased meaning and interest which attaches to them.

*The zest of life.* The high-school pupil's strong tendency toward amusement has been the source of serious concern on the part of parents and teachers alike. Boys and girls of the teen age are not content with the orderly routine of the school and the home — quite the contrary. Abounding energy and love of excitement lead them to fill the largest possible proportion of their leisure time with games, parties, dances, expeditions, automobile rides, moving pictures, and other amusements. Their desire to experience the new and strange leads them to throw off existing customs and practices, for which they substitute others. Parents and teachers, forgetting the surge of interest they themselves felt, and remembering the customs which existed a generation back, fail to understand the point of view of the young. Often they become worried and flustered, and lose control either by not knowing what to do and hence doing nothing, or by undertaking to discipline through the exercise of authority. The school has at last begun to appreciate the strength of the disposition toward amusement, and to see the vital connection between the way a youth spends his leisure time and his character. We are beginning to realize, also, that the only way the problem is to be solved is through intelligent and sympathetic study, undertaken coöperatively by the school and the home.



*Mutual relation of the sexes.* The importance of the habits which might be listed under this caption needs no elaboration, and to close the eyes to these problems is not to solve them. Two sub-headings are sometimes tacitly made under the general heading, although basically the sub-headings are related. One has to do with social manners and convention, to use the term "social" in its narrower sense; the other with habits and practices pertaining more directly to sex.

We feel that we are on safe ground when we give training in the niceties of convention and in the ability to meet other people, and it is gratifying to note the progress that is being made in training in this respect, although such training is often sadly lacking. Manners are really minor morals, and as such should not be impressed from without, but should grow from within outward. A truly well-bred person cultivates his manners because of his inner convictions and because of his regard for others, rather than for superficial reasons.

Theoretically, the barrier of false modesty which has stood in the way of sex instruction has been broken; practically, it still exists perhaps in the majority of homes and schools. It is generally conceded that boys and girls should know the function of their bodily organs, and that they should have from persons competent to give it information about the nature of the various social problems. Along with this should be developed the desire for physical strength and skill in athletic sports, so that a vigorous physical life may act as a cathartic against undesirable habits. Likewise, there should be implanted ideals of personal honor and chivalry, along with the more modern attitude of comradeship between boys and girls.

*Religion.* It is significant that such data as we have show conversion to take place for most persons between the ages of twelve and twenty, with the greatest frequency occurring

during the early or middle teens. Sooner or later, the time is bound to come when the individual will try to reconcile standards and ideals of conduct with action, if not in his own case, then in the case of others. This often leads him to a state of mental turmoil which is not lessened when the teachings of science begin in his mind to conflict with religious creed. Left to himself, he may not be able to resolve the conflict, and he may wash his hands of the whole matter and assume an attitude of indifference which augurs ill for the future. How great the difficulty becomes in a specific case depends upon the individual. The literalness with which he was taught creed in his earlier years, the abruptness with which he meets the principles of science, and his own ability and disposition to think things through are all contributing factors. Certainly it is safe to assume that the problem is more or less keenly felt by many high-school pupils. They do not always receive assistance in their attempts at solution, because of the natural disinclination of teachers to allow religious discussion to enter the classroom.

**Developmental stages of moral responsibility.** In considering the commoner violations of decorum as well as the graver faults of secondary students, it will be helpful to sketch briefly the development of moral responsibility. To be moral, one must be able to foresee a remote end, and to regulate action over a considerable length of time. A young child cannot so foresee the outcome, nor can he so control his action. He is, therefore, to be regarded not as moral or immoral, but as unmoral. His acts are more instinctive than they will be at a later age, because of his immaturity in development and lack of time for learning. Right is determined by what he is permitted to do, and wrong by what is prohibited. His moral training consists largely of the establishment of proper physical habits, habits

of obedience and honesty, and the development of certain inhibitions. This training is highly important, however, for it lays the groundwork of later moral character.

As time goes on, increased maturity and learning bring about the formation of certain standards of behavior. Conduct is bound to be somewhat uneven, and the child may show a considerable sense of obligation in one field and a surprising lack of conscience in another. All along the line, care must be exercised continuously to see that habits of industry, cleanliness, truthfulness, and obedience are fully formed, although the more arbitrary methods of early childhood should be gradually tempered by moral suasion and appeals to reason.

By the end of the high-school period, it is likely that many habits of conduct and ideals of action will have been established, for the youth has reached by that time the age when he takes his place in the social group. Control by word of command must be given up almost entirely, and action influenced by an appeal to ideals and understanding and by according to the young person his passionately wished for recognition of equality. Before this age is reached, however, a long and difficult period of training ensues. At some time during the earliest stages of adolescence, there seems to be a strong tendency to break away from the fairly good conduct of the years preceding. Quickened emotional life, love of excitement, a widening mental and social horizon, and the lack of well-formed habits, lead to the entertainment of ideas and forms of behavior often at variance with accepted standards. Normally, these should be modified or given up one by one, until moral adjustment is finally accomplished. The majority of young people solve the problem of control, and they organize their lives along social lines; a minority fail in such adjustment and become delinquents, transgressors of the civil law, or criminals.

**Misbehavior in early adolescence.** The number of disciplinary cases occurring in school for the various age groups throws an interesting side light upon moral development, and incidentally helps to understand the problem of school discipline. A number of years ago, Marro<sup>3</sup> listed the school offenses of over three thousand secondary students in Italy. Comparatively recently Giles<sup>4</sup> made a similar study record for 687 boys and 767 girls in an American high school. When curves were plotted, it was found that there was a decided tendency to break away from the fairly "good" conduct of earlier years. Marro found behavior less stable at the age of fourteen, while Giles found the greatest number of misdemeanors a year or two later. In explanation, Giles suggests that some allowance should probably be made on account of the later age at which puberty occurs in this country. The significant thing about these investigations is, their agreement in showing the same tendencies toward misbehavior during the early adolescent years.

*Characteristic faults.* When an attempt is made to determine the characteristic faults of young people, it will be observed that the point of view of the person or source consulted must be taken into account. Parents mention willfulness and obstinacy, teasing, quarreling, and boisterousness as the outstanding faults of their children; teachers speak of inattention far more than any other trait; while children's ideas of their own shortcomings are described chiefly in terms of fighting, teasing, and bullying. Disorder, disobedience, carelessness, running away, and quarreling are not infrequent during the first or second year of the junior high school.

During the senior-high-school period, offenses are of a somewhat different nature. A tabulation of 755 cases of

<sup>3</sup> Cited from Hall, G. S. *Youth* (1906), p. 121.

<sup>4</sup> Giles, F. M. *Sch. Rev.* (1917), 25: 433-43.

serious discipline revealed the following specific types:<sup>5</sup> Pupils paint the roof of a building or the sidewalks in the colors or numerals of their class or other organizations; occasionally they walk out of classes to go picnicking or hiking; in other instances they may strike because of a real or imagined injustice to the entire student body or one of its members; disagreeable odors are often loosed upon the school for the amusement of a few daring boys; missiles are sometimes thrown; books or various articles from lockers and desks may be stolen; cheating may take place during quizzes and examinations; class groups, or the entire student body engage in fights; loud and unusual sounds are made during class time or in the study hall; freshmen are forced through initiation stunts; pupils appear at school in unusual clothing; occasionally there are instances of gambling, drinking, and perverted sex morals.

Knowledge of out-of-school misdemeanors is best gained from juvenile court statistics. This subject cannot be considered in detail here, but it should not be dismissed without calling attention to the fact that it is a part of the broad problem of moral training. Statistics show incorrigibility to be greatest at the approximate ages of thirteen to sixteen. Idleness on the part of children who have complied with the compulsory attendance law adds greatly to the number of delinquents.

**High-school pupils' self-judgments.** A comprehensive questionnaire dealing with a number of phases of the high school was recently answered by students of high schools located in the North Central Association. About ten thousand replies were received from juniors in high schools scattered through nineteen States.<sup>6</sup>

<sup>5</sup> Belting, P. E. *The Community and Its High School* (1923), p. 237.

<sup>6</sup> For a complete account see Davis, C. O. "The High School as Judged by Its Students"; in *Proceedings of the 29th Annual Meeting of the North Central Association of Colleges and Secondary Schools*, part 1 (1924), pp. 71-144.

*Attitude toward religion.* Questions pertaining to religion were answered by more than seven thousand pupils. On the basis of their replies it seems that fully three fourths of high-school boys and girls are deeply concerned with the question of religion, belong to some church, and are fairly regular in attendance. About six thousand answered a question as to whether or not a course should be offered in high school which would deal with the fundamentals of religion. Of these, about half favored such a course, in which knowledge of the Bible, principles of morality, knowledge of the different religions, and ability to think through religious questions should be considered.

*Attitude toward morals.* Data were collected in the North Central investigation bearing upon certain moral ideals and practices. They are of such an enlightening character that they are cited in some detail.

The pupils were asked to score themselves upon thirteen specific moral qualities. In commenting upon the returns, Davis calls attention to the fact that the total vote fluctuates over eleven hundred ballots among certain items. He asks whether or not the pupils preferred to say nothing at all when they were uncertain about saying "yes." The replies are summarized in Table 50.

[Davis asks if] it is not a matter of great concern to school authorities and parents that approximately one fifth of all pupils acknowledge they are not punctual in appointments, that approximately one twelfth of the school is not dependable in its promises, that approximately one eighth of the pupils are not honest, that approximately one seventh are untruthful, that one fourth are not industrious in their habits, that approximately one tenth are disrespectful of law and authority, and that three eighths are not able to control passions. Is it serious that 28 out of 100 pupils are lacking in perseverance, that 11 out of 100 are confessedly ill-mannered, that 27 out of 100 are pessimists, or even that 7 out of 100 are lacking in courage and 6 out of 100 are not loyal to associates?



TABLE 50. HOW HIGH-SCHOOL PUPILS SCORE THEMSELVES ON MORAL TRAITS

Would a competent person classify you as:

	TOTAL VOTE	"YES" (per cent)
Punctual in appointments.....	7385	81
Dependable in promises.....	7267	92
Honest in all dealings.....	6977	87
Truthful in your statements.....	7116	86
Thorough in your work.....	6926	63
Industrious in your habits.....	7040	75
Persevering under difficulties.....	6875	72
Respectful of law and authority.....	6642	91
Well-mannered.....	7165	89
Courageous.....	6033	93
Able to control passions.....	7108	73
Loyal to associates.....	7414	94
Optimistic.....	6267	73

Relatively speaking, the figures . . . seem to indicate that boys are less punctual than girls, less well-mannered, and are less optimistic. On the other hand, girls seem to fall considerably short of the attainments of boys in respect to perseverance under difficulties, control of passions, and thoroughness of work.

When asked to name the three most notable factors in their school which tend to develop high moral qualities, the pupils named their teachers in nearly a third of the cases. School organizations and athletics are other influential factors. Speakers, student government, high standards of work, the honor system, and other pupils were also mentioned, but they were relatively less important. These judgments of pupils coincide to a remarkable degree with those of California high-school principals,<sup>7</sup> nearly two hundred of whom thought the following influences to be effective in giving moral education: personal influence of teachers, daily lessons, athletics, student clubs, self-government, reading

<sup>7</sup> Proctor, W. M. *Educational and Vocational Guidance* (1925), p. 224.

and literature, student assemblies, advisory systems, and direct instruction. On the other hand, the influence of a few low-minded individuals was held chiefly responsible in sixty-three per cent of 1387 cases for departure from right conduct. Immoral parties and poor discipline received condemnation, as did "some teachers."

Over sixty per cent of approximately five thousand students thought that a course in moral education would be desirable. In their opinion such a course should assist in building moral character, promote decency and courtesy, aid in the formation of health habits, stimulate purity of thought, and help in forming desirable attitudes towards the opposite sex.

*The faults of high-school pupils.* Table 51 is based upon something over seven thousand replies, in which pupils listed three most regrettable practices prevalent among themselves. In all, 5775 items were named. The percentages are indicative of the number of times a single item was mentioned.

TABLE 51. HIGH-SCHOOL PUPILS' STATEMENTS OF THEIR OWN FAULTS

REGRETTABLE HABITS AMONG BOYS (per cent)		REGRETTABLE HABITS AMONG GIRLS (per cent)	
Smoking.....	38	Use of cosmetics.....	17
Swearing.....	19	Flirting and petting.....	14
Gambling.....	8	Profane language.....	12
Drinking.....	8	Snobbishness.....	12
Bad manners.....	5	Extreme dressing.....	10
Vulgar stories.....	5	Ill manners.....	9
Cheating.....	4	Smoking.....	8
Attitude toward girls.....	4	Out nights.....	7
Loafing.....	3	Cheating.....	6
Late hours.....	3	Vulgar stories.....	3
Immoral sex habits.....	1	Drinking.....	2
Stealing.....	1		
Cliquing.....	1		

Pupils were asked to answer definitely whether or not they ever engaged in certain practices, indicated in Table 52. Only the number answering in the affirmative is here given.

TABLE 52. DO YOU EVER ENGAGE IN ANY OF THE FOLLOWING PRACTICES? AFFIRMATIVE REPLIES OF HIGH-SCHOOL PUPILS

	TOTAL REPLIES	AFFIRMATIVE REPLIES			
		Boys	Girls	Total	Per cent
Smoking.....	7547	1018	218	1236	16
Drinking alcoholic liquors..	7370	671	139	810	11
Gambling.....	7406	635	450	1085	15
Cheating.....	7235	531	391	922	13
Using vulgar or profane language.....	7124	1571	629	2200	31
Flying into fits of violent temper.....	8030	939	1251	2190	27
Telling or willingly listening to coarse or vulgar stories	7175	1499	924	2423	34
Dressing extravagantly....	7290	299	212	511	7

Davis says:

Surely the replies smack of frankness and candor. Perhaps, too, they are the best index we have of the general moral tone of our high-school youths. There are those who are guilty of immoral practices, but the proportions are not large. Possibly when from a fourth to a third of all the pupils confess to using vulgar and profane language, telling or willingly listening to coarse or vulgar stories, and flying into fits of violent temper, the numbers are disquieting. But the sole reason that pupils go to school is that they are undeveloped and need to have changes wrought in them. The ones who are addicted to regrettable practices may challenge severely the art of teachers, but they are not unimprovable nor headed for damnation.

*Need of specific training.* In an earlier paragraph it was remarked that moral character is the sum total of our ideals

and actions. This view implies specific training for specific situations. We must, if we would make training more effective, enlarge our knowledge of the specific problems involving a moral issue and demanding decision and action, which a child of twelve or one of fifteen will encounter. Then we can at least give instruction in meeting these situations. The accompanying tables indicate quite clearly some of the types of specific training needed.

**The school studies and moral training.** The similarity between the classes of the problems of youth, as discussed in this chapter, and the objectives of secondary education is evident. A clear formulation of educational aims, especially of the more immediate aims, will uncover many of the problems that concern students. As subject-matter is further socialized and as the principles of immediate values and interest are brought more and more into teaching, general classroom work will contribute more and more effectively to moral training. Negatively, mere development of intellectual capacity does not result in the most effective moral training. Too often there is a gap between knowing and doing, and our problem here is to effect a union between them. Obviously, no conflict exists between the most effective method of moral growth and the most efficient intellectual development. Both demand that subject-matter shall have meaning to the student, for in no other way can attention be gripped and maximum effort stimulated. Subject-matter becomes more meaningful as it finds applications and as it is made over into terms of the individual's own activities, habits and desires.

*A class in morals.* One of the first suggestions is to provide a special class for teaching morals. A course in ethics, for example, has long been a part of the curriculum of liberal arts colleges. In France, instruction in morals was provided shortly after religious instruction was discontinued in the

public schools. Japan has a program of moral education which has been referred to as successful, although in that country moral and religious teaching are not entirely separated.

Most students of the question would admit that such an arrangement might be productive. There are a number of questions,<sup>8</sup> however, which must be answered before school officials will recommend specific classes for moral instruction. Among these are the following: (1) How can we be sure that the precepts taught in such a class will affect conduct? To date it has been almost impossible to evaluate college courses in ethics. How far action is really modified by such instruction is a matter of opinion. Again, the student may be influenced to think of morality in terms of knowledge rather than in terms of conduct. (2) Since morality is involved in every phase of life, would it not be better to make moral training a part of every course, rather than to attempt to segregate it into a period a day for a semester or longer? School lessons are more likely to deal with concrete situations in which a moral principle is involved than is the separate course in morals. Pupils will understand and be interested in such teaching, whereas they are not yet ready for a consideration of abstract principles. (3) Are not teachers of special training and of distinctive personality demanded? This is a temporary obstacle rather than a question of the effectiveness of the class in morals. Undoubtedly, such teachers should possess sound views, a wide range of knowledge, and rare skill in teaching.

While it seems to be the consensus of opinion that moral education should be provided primarily through activities already at our disposal, there is evidence<sup>9</sup> to show that we

<sup>8</sup> See Palmer, G. H. *Ethical and Moral Instruction in Schools* (1908).

<sup>9</sup> Voelker, P. F. *The Functions of Ideals and Attitudes in Social Education* (1921).

may expect results from direct instruction. Voelker divided a number of boys ten to fourteen years of age into six groups. To these he gave a series of ten tests, reaction to which would give opportunity to judge trustworthiness or untrustworthiness of behavior. In the first trials he found that the boys yielded, in varying degrees, to the temptation to keep over-change, to steal, to misrepresent, etc. During the two months following the first test, two of the groups of boys were given extensive training to develop their ability to size up a moral situation, and to form approved habits of response. Two groups were given less intensive training, and two groups had no particular instruction. When the boys were retested, it was found that those boys receiving no training improved least, those receiving the intensive training improved the most, while the others fell midway between. From the experiment it seems that untrustworthy conduct is due in part to lack of clear consciousness of the moral implications of an act, and in part to the indisposition to act in accordance with standards of right even when the moral significance of the question is realized.

*Literature.* Literature has always been regarded as one of the most important means for the development of high ethical character. It communicates, in the best form and manner, the thought and knowledge of the past; it deals with conduct in such a way as to excite a judgment of blame or approval. Literature not only stirs the emotions, but it induces similar feelings among different readers — usually those feelings which the author hoped to arouse. Experience is broadened (a wide knowledge is necessary to morals) and it is interpreted by showing how individuals have thought and acted under circumstances which can be evaluated and the worth of acts judged. The student of literature is aided in overcoming his pettinesses and prejudices, for he is shown that others have worthy thoughts and high



ideals, which after all are more important than small differences.

Perhaps the greatest influence exerted by the study of literature upon conduct comes through the psychological principle of empathy,<sup>10</sup> which is a mode of mental behavior invoked in partial gratification of the impulse of mastery. In the contemplation of art, there is present a tendency to project one's self into the object contemplated. Especially in watching a play or in perusing biography or literature the reader identifies himself with a character of the story, usually the hero. The thoughts, feelings, ideals, and motives of the hero thus become the property of the reader, conditioned, of course, by the mastery of the details of the story and the completeness of identification. Given a situation similar to the one depicted, and the boy or girl tends to react in a way similar to that in which the hero reacted. Jane Addams shows, for example, that young people attend the theater because there they see life portrayed as they dream of it. They imagine they are living such a life by putting themselves in the place of certain characters. So thorough is this identification that "in moments of moral crisis they turn to the sayings of the hero who found himself in a similar plight." Thousands of young people attend the theaters every evening, and "what is seen and heard there becomes the sole topic of conversation, forming the ground pattern of their social life."<sup>11</sup>

The teacher should be an interpreter of the thought and action contained in the literature rather than a dissector of literary form. Content is primary and form ancillary, rather than the reverse. Literature read must thus be neither above nor below the comprehension of the students,

<sup>10</sup> See Woodworth, R. S. *Psychology* (1921), pp. 491, 515.

<sup>11</sup> Addams, Jane. *The Spirit of Youth and the City Streets* (1909), pp. 83, 86.

and selection must be made with reference to the intellectual background of the students and the interests natural to age and sex. The effective teacher does not preach; he finds that explanation and interpretation are better. Given understanding, pupils will make their own applications.

*Biography.* Like literature, biography has long been looked upon as an important instrument for stimulating moral growth. Both present the peculiarities of individual character and the general aspect of the society in which the peculiarities appeared. In favor of biography it might be asserted that the facts are true and not imaginative, but this suggestion could be countered by the statement that the facts of good literature are true to life, although they may be disarranged in time and place. By its very nature literature should have the advantage in form and expression, although the best biographies are not deficient in this respect.

Empathy is called into play in reading biography as in literature. In biography it is more likely to take the form of hero worship, which in all probability exerts even greater influence on character formation. Efforts at emulation are greater, particularly if the hero is a contemporary. Young people should have, not a fragmentary, one-sided view, but a true and intimate knowledge of the biographies of great men and women.

*The social sciences.* If morality consists of the intelligent choice on the part of the individual of habits of action for the good of the group, it is clear that those subjects which deal with the relations and institutions which are involved in man's existence and his well-being as a member of an organized community will occupy a prominent place in moral education. These subjects are history, which chronicles the past development of human affairs; civics, which explains the principles of government in their application to society; economics, which treats of the science of wealth, its

production, distribution, etc.; sociology, which investigates the general structure of society, the laws of its development, the progress of civilization, and all that relates to society; and geography, which shows the location and scene of social action.

The problems which concern organized society have to do with government, education, public health, the punishment of crime, the reformation of delinquents and criminals, pauperism — in a word, with anything which concerns the well-being of the community. Specific problems calling for individual and group decision are the question of the fitness of a candidate for office, levying taxes for the support of schools, acceptance or rejection of an amendment to the national constitution which gives Congress power to regulate the labor of children under eighteen years of age, the desirability of capital punishment of crime, the justice of a request of a telephone or a transit company for higher rates, and a host of others. Any question dealing with the welfare of the social group has a strong moral bias.

Upon the method employed in teaching and studying the social sciences depends to a great degree the moral development and insight which will accrue to the students. The chronological method of treatment, found not only in classroom methods, but also in the arrangement of courses, too often consists merely of a recital of events. At its best it permits the establishment of causes which produce subsequent events, but the relationships existing between events are likely not to be traced to the present. Hence, it cannot be as productive of moral values as a newer method which now finds many supporters among teachers of the social sciences, and which takes for its point of departure questions of immediate concern. In the study of these, effort is made to collect reliable information from current sources, and history is depended upon to furnish instances of the appearance

of the question at earlier times. Under this plan the pupil is stimulated to do his own thinking and deciding. The past is thus connected with the present. Pupils are able to see how the present is dependent upon what has gone before, and they should also be able to see how the decisions and actions of the present will modify the future. Such a study of the social sciences will have a high degree of moral influence.

*Other subjects.* Every subject and every school activity contains possibilities for moral training. Foreign language, science, mathematics, music, and the practical arts are all intimately related with human affairs, and all contain to a greater or less degree great truths. It is impossible to consider here the moral values inherent in each separate high-school subject.<sup>12</sup>

**Extra-curricular activities and character development.** It is in the so-called extra-curricular activities that the boy or girl is most likely to find vitally interesting problems. His club contains other pupils who have joined it for the same reason he has, namely, because of interest in its activities. In class meetings and in convocations of the entire student body questions are considered which are at the same time of individual and of group concern. Since they are of vital interest, pupils do a great amount of thinking about them, and there is usually an opportunity for them to act upon their conclusions. All the conditions necessary for moral growth sketched at the beginning of this chapter are found in student activities. Higher moral values are yielded as the organizations are perfected and as students are stimulated to study more thoroughly the problems upon which they make their decisions.

Perhaps nothing connected with the school so gains the

<sup>12</sup> For a discussion of the moral values of the several high-school subjects, see Neumann, H., *Education for Moral Growth* (1923), pp. 247-97; *Bur. of Educ. Bull.* (1917), no. 51.

whole-hearted interest of boys or commands effort on their part as athletics, and perhaps no teacher influences boys as much as the athletic coach. His merest suggestion is eagerly seized, and his directions produce concentration and effort that are the envy of his academic colleagues. The reserve of the classroom is dropped, and it is within the power of the coach to know his boys most intimately. He is therefore able to mould their ideals, not in matters pertaining to sportsmanship alone, but along many other lines. His influence is not confined to the boys who "try out" for the team. The entire student body takes a great interest in its teams and in interscholastic contests, while the community at large is often more concerned with the athletic program than with the program of studies. This may even go so far that the position of the coach is insecure unless he produces successful athletic teams. Many coaches are therefore tempted to provide successful athletic teams at almost any cost. Eligibility rules are often evaded, and the whole school becomes influenced to a degree entirely out of proportion to the real value of the athletic program. Even the high-school principals sometimes certify athletes whose eligibility they have not closely investigated, or allow the program of studies to be broken into, or in other ways lose their sense of proportion.

It is entirely possible to retain the benefits of interscholastic athletics and to eradicate their evil influences. The program should be extended so that practically all may benefit from games and competition. Coaches should be selected for their qualities of manhood and their understanding of the problems of physical and moral education, as well as for their ability to coach winning teams. Upon the high-school principal rests the responsibility of seeing that the athletic program is given its proper place, and that the pupils and the community are educated to appreciate it.

**Methods of teaching and moral training.** Dewey points out that the highest moral values are not realized under the ordinary recitation plan. The child does not give anything to the group, first because all are studying precisely the same thing and the individual child would have nothing not already in the possession of others; and second, because in sharing the results of his work with others he becomes liable to condemnation and punishment. Instead of cultivating social habits we actually cultivate individualistic tendencies by relying upon emulation and rivalry and fear of punishment. Success is judged upon a comparative basis, with reference to capacity to realize the same external standard. The strong glory in the fact that they are stronger than the others; the weak or timid are depressed. At present teachers do too much correcting of wrong; more stress should be placed upon forming habits of positive service.<sup>13</sup>

The socialized recitation is offered by current educational method as a corrective for the practice condemned by Dewey. Under this plan pupils consider together a topic or problem of concern to all. A single pupil, working upon a phase of the lesson, can thus contribute something of value to the group. The class will be interested in his contribution because of common interest in the main topic. Rightly carried out, the socialized recitation substitutes mutual helpfulness for individual competition. Its superiority in moral training is evident.

**Week-day religious instruction.** The moral training of the school and the moral and religious training of the church should contribute to each other, even though their approach is likely to be different. The psychologist would probably say that moral precepts are gained by the individual and by the race through numerous concrete experiences; no general idea can be evolved or understood in any other way than

<sup>13</sup> Dewey, J. *Moral Principles in Education* (1909), pp. 21-27.



this, the method of arriving at the general through the particular. The religious teacher, on the other hand, may hold that morality must have a religious basis — that the moral code, in short, must be founded upon revealed truth. Either proposition may be granted, and it will still remain true that those interested in religious training, no matter the creed or sect, agree pretty well as regards truthfulness in the home, school, or on the street; as regards honesty in meeting financial obligations; as regards specific acts of personal morals, and many others. They are in agreement, moreover, with respect to numerous moral precepts and ideals. The grounds upon which agreement has been reached are sufficiently ample to give full scope to a program of moral education.

*Coöperation by the public schools.* It is assumed that every one should have religious training; it is quite evident, also, that this training must for the most part be given during those years spent in school. The church is, of course, the great institution for religious training. It is being asserted with increasing frequency, however, that the Sunday schools, because of the short time at their disposal or because of poor attendance or both, are not reaching young people as they should. Those interested in religious education are therefore turning in large numbers to the schools for aid. Several States and scores of municipalities have approved proposed courses and are coöperating in the movement.<sup>14</sup>

In some places a course in Bible study is worked out by representatives of the different religious faiths in coöperation with the school authorities. Those items which all agree upon are included; those exciting disagreement are omitted. Needless to say, creed is left out entirely. A course covering a semester or a year is arranged, which

<sup>14</sup> For a discussion of the various plans, see recent numbers of *Religious Education*.

pupils may elect and for which they receive credit. The teacher is usually a member of the regular staff, and is agreed upon by the representatives of the churches and by school officials.

Under a second plan, religious instruction is given by teachers appointed by the churches. This permits teaching special religious doctrines, for pupils are under the tutelage of persons of their own denominations. It necessitates setting aside one or more of the regular school periods per week for instruction and is objected to frequently because it interferes with the regular program of studies. Sometimes the classes are taught at the school; sometimes pupils are excused and allowed to go to the churches. School credit may or may not be given.

#### TOPICS FOR DISCUSSION AND INVESTIGATION

1. Explain Herbart's view of morality as the ultimate aim in education.
2. How can one judge the efficiency of moral training?
3. Contrast the method you would adopt for moral education with the one you would adopt for effective classroom instruction. What are the similarities and differences?
4. What is religion? What is the connection between religion and morals?
5. Are secondary-school pupils especially interested in religious matters? Should they have religious instruction? (See Hall, G. S., *Adolescence*.)
6. What are the legal provisions in your State with respect to religious teaching in the public schools? Compare with provisions in other States.
7. Sketch the content for a secondary-school course in morals.
8. Is the enrollment in parochial schools increasing or decreasing? Why?
9. Discuss the following statement: "The influence of the school is moral. Improper actions are not tolerated; the effort is to establish proper habits of action. Low ideals meet disapproval; high ideals are encouraged. The public school can defy its critics to name an admittedly immoral practice for which the school stands sponsor. It can rightfully claim to be the most important factor, from a moral standpoint, in the lives of many boys and girls."
10. What is the strength, and what are the weaknesses, of the honor system in examinations for training in moral character?

11. Of what significance for moral training are punishments? .
12. Suppose some one brought suit to restrain the schools from coöperating with outside agencies in giving religious instruction. What would be the result? (This issue was in 1925 raised in New York State.)

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## CHAPTER XVIII

### WORTHY USE OF LEISURE

**Significance of leisure.** More than sixty years ago Herbert Spencer prophesied that methods of increasing production would result in a greater amount of leisure. Time has shown his prediction to have been well founded. The eight-hour day and the five-and-a-half day week are already here in many industries. Unless all signs fail they will not only remain, but they will enter those industries where a longer working time is now the rule. It is not improbable that the future will bring a still further reduction of the working day.

The function of leisure is recreation and refreshment of strength and spirit after toil. Without training, there is no guarantee that leisure will be so used. On the contrary, history shows that newly gained leisure is likely to be abused. Men whose time is consumed with activities directed toward an economic end are usually inclined to regard leisure as a time for amusement and entertainment. Some types of amusement and entertainment do re-create and regenerate; if such is the case it is usually because they are in line with previously established habits of a worthy nature. We know that all too often amusements may not be recreative, and that they may be degenerate. A part of the problem of education for worthy use of leisure is so to train young people that they will substitute habits of harmless enjoyment for questionable or harmful amusements; a bigger problem is so to train them that leisure may be employed, not merely in ways that are harmless, but in ways that contribute to human betterment.

In childhood, play is characterized by interest in activity,

and by little thought of the result of the activity. With the adult, interest in intellectual activity for its own sake is an outgrowth of the play tendencies of childhood. In the history of the race, the play attitude has resulted in intellectual accomplishments, such as scientific discovery and production in sculpture, painting, music, and other forms of art. Thus leisure has been called the parent of the arts and sciences, and these have been termed the parents of higher civilization. "What leisure has done for the race," says Henderson, "it may also do for the individual. When properly employed, it is the most important source of personal growth. When improperly employed, it is the creator of idleness and vice, incompetence and degeneracy. Eight-hour laws may be, as President Eliot suggests, a positive harm. If they merely furnish a better chance to get drunk, they are a curse rather than a blessing."<sup>1</sup>

If leisure is to be profitably employed, children must be taught to play. Their interest must be aroused in the common objects of nature; they must be shown the worth of literature and art. The best guarantee of an adult interest is the cultivation of that interest during childhood, which is the age of spontaneity and breadth of interest, as Herbart long ago pointed out. Nature provides a fund of tendencies which, if education does its part, gives a right bias to interests and habits. Crystallization of habits, which comes with maturity, makes new interests difficult. Manifold interests established during childhood and youth are an antidote for narrowness in later life.

The purpose of this chapter is to indicate the ways and means at the disposal of the school in cultivating leisure-time habits and interests.

**The nature of art and art instruction.** A work of art tells a story in such a way as to arouse emotion. By observing

<sup>1</sup> Henderson, E. N. *Principles of Education* (1910), p. 566.

particular and successful means of expression, and by generalizing upon them, mature students of art have constructed systems of scientific proposals upon which rules of practice may be founded. In other words, each division of art has its system of rules and traditional methods for facilitating the performance of certain actions; acquaintance with such rules and skill in applying them constitute the stock in trade of the artist. For example, the musician is able to combine tones in rhythmic, melodic, and harmonious order, so as to convey emotional content and meaning and to produce effects intelligible and agreeable to the ear. The writer links facts and ideas of permanent and universal interest with emotions, and expresses them in approved form.

*The older art courses illustrated.* The origin and nature of art on the one hand, and the psychological characteristics of children on the other, point to guiding principles to be observed in planning instruction for the purposes of enjoyment and appreciation. They indicate, in the first place, the mistake of any procedure in teaching which takes for its point of departure the technical aspects of art. That courses in the fine arts have been constructed largely on the basis of technique is a fact entirely familiar to any one who has taken the trouble to examine them. Just as teachers have believed that the way to improve oral and written speech is through a mastery of formal grammar, so teachers of the various art subjects seem to have thought that the way to teach art is through the rules generalized by mature students into a system of technique. For example, the aims of the art course in the junior high schools of one city are stated in terms of neatness and accuracy, observation as a basis for scientific study, stimulating creative ability, description of three dimensions in terms of two, learning to hand letter freely any subject requiring hand lettering, mixing of color, good workmanship, skill of hand, good proportion, cultiva-



tion of taste in line and form, and recognition of good color combinations. The laws of art — concentration dominance, and subordination, contrast, transition, opposition, repetition, and variability — also received prominence. The “projects” involved “useful objects” such as posters, book covers, boxes, etc. It should be apparent that, for the most part, the attack has been made at the wrong end.

Instead of stressing the formal phases of art, we should begin with the story which motivated its production. Knowledge of the story and acquaintance with its historical or social setting stimulate the feeling or emotion in the mind of the observer, listener, or reader which the artist hoped to arouse. Repeated experience with a production of art and comparisons of different productions easily result in sufficient technique for enjoyment and appreciation.

*A modern course in art.* Much better adapted to the needs and interests of pupils seems the program below, wherein the general aims are conceived to be to increase the pupils’ command of drawing, and to make them more definitely conscious of the specific values of drawing as a means of expression; to develop better taste in common things; to develop appreciation of color harmony and skill in producing or selecting harmonious colors; to foster a love of beauty in nature; to widen acquaintance with, and to increase pleasure in, works of art. The extract <sup>2</sup> represents a part of the work given in the seventh and eighth grades in a city school system.

Main theme or center: The home and its furnishings.

1. By developing acquaintance with some fundamental principles of design through a study of home planning and decoration:

a. *Any truly beautiful object is suited to its purpose.* What are the

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<sup>2</sup> Extracted from a bulletin entitled “Drawing,” Minneapolis Public Schools, pp. 40-42.

purposes of a home? Of the several rooms? Of walls? Of floors? Of various pieces of furniture? Is giving pleasure to the eye a purpose of walls, rugs, furniture, dishes, etc.? What do these purposes tell of good taste in choice and arrangement of furnishings?

- b. *Balance, rhythm, and harmony underlie beauty in nature and art.* How is balance illustrated in the façade of a home? In the arrangement of drawers in a dresser? In a chair? How may rhythm be illustrated in the arrangement of the drawers in a good dresser? In the borders of a rug? How is harmony illustrated in hanging window curtains? In the arrangement of a dining table?
  - c. *Lines, shapes and colors bring definite emotional responses.* Why is a striped wall paper unsuited to a small high room? Which color combinations are most striking? Which are most restful?
2. By having pupils illustrate the principles mentioned above in designs for objects which members of the class will make in their sewing or manual training.
  3. By endeavoring to make every gift or holiday greeting beautiful in form, construction, arrangement, and color.

Main theme or center: Costume design and commercial design.

1. By extending the pupils' acquaintance with some of the fundamental principles of design through a study of costume design and personal adornment.
  - a. *Any beautiful object must be suited to its purpose.* Why are exceedingly narrow skirts never beautiful? Why are high collars ugly? What are the general purposes of clothing? Plan costumes for various uses: School wear, skating, other sports, working garments.
  - b. *Any decoration should enhance the form decorated.* Why should slender people avoid long vertical lines? Why do extreme styles so soon become out of date?
2. By designing collars, beads, fans, bags, or other accessories of dress.
3. By designing posters for community or school activities or needs.
4. By selecting some package or carton of some Minneapolis product, and, while keeping the necessary trade mark and signature, trying to design a more attractive container.

*Design.* The arts and principles of design were for a long time limited to the field of ornament and separated in school from practical application. Too often they are still so separated, and used only as decoration worked out in accordance with the principles of formal beauty and applied to completed objects. In relation to the practical and industrial arts, design means that æsthetic demands should be combined with the utilitarian. Utilitarian demands are the first consideration in the production of goods; closely associated with them should be craftsmanship, good proportion and good outline.

The traditional work in design is being supplanted by an applied type or types which will help young people develop standards of taste in dealing with what might be called the commonplaces of life, as illustrated in the above quotation. The new courses undertake to teach boys and girls to understand the principles of art as applied to wearing apparel, house building, home furnishing, public buildings, streets and parks, in the hope that they will develop such standards of taste as will enable them both to recognize and to demand superior commercial design. These applications are too far from the formal principles or isolated patterns of many art classes for instruction to be effective; hence the need for applied courses.

**Education for expression vs. education for enjoyment.** There are two classes of pupils whose needs must be recognized in planning secondary courses in fine arts: those interested in expression or performance; and those who will be benefited through enjoyment and appreciation. The first group may again be divided. A relatively small number will have a vocational interest in music, drawing, or literature; the remainder will seek to develop ability in expression as a means of enjoyment. To these pupils every reasonable encouragement should be given by the school. The time has

not yet arrived, and probably will not arrive soon, when they can secure individual instruction at public expense. The time has come when these students may be provided for through school credit for private instruction given under standard conditions. Considerable instruction in music is furnished through school bands, orchestras, and glee clubs; while training in the expression side of literature, drawing, and other arts is furnished to some extent through the various curricular and extra-curricular activities.

Since the rank and file of people gain from the fine arts by enjoying and appreciating them, it follows that as many pupils as possible should learn to appreciate the various forms of art. Education for appreciation is therefore a large task, and but the merest beginning has been made upon it.

*Education for appreciation.* On the whole, our secondary schools have not advanced to the place where the problem of art education is one primarily of method. A much more fundamental question must first be settled. It is whether or not the fine arts (with the exception of literature) shall be given in the curriculum a place analogous to science, mathematics, or foreign language. As a matter of fact, the reasons for such recognition are so strong that progressive schools have for some time set aside one or two periods per week in certain grades for art instruction. For these schools the question of method in art instruction is in point. In perhaps the majority of secondary schools, however, art instruction is lacking or given such scant attention as to make its worth practically zero. For them the problem centers upon the educational values of the arts.

*Individual differences in enjoyment.* It would be surprising indeed if every one gained the same amount of enjoyment from music, the drama, sculpture, or the other arts; and it would be equally surprising if all pupils were interested to the same degree, for example, in literature. Dif-

ferences in mental traits, in home surroundings, and in training are so great that we may expect to find some pupils who enjoy and appreciate even the highest forms of a certain type of art. There will be others who for various reasons manifest little interest. To subject all to the same instruction is impossible, if real results are to be gained. Again, it is more than likely that in contemplating the same art production, different people are appealed to in different ways. In discussing literature, Thorndike points out that some enjoy the technique of the writer in the same way an unpartisan spectator enjoys skill shown in a football game; others feel the sensory delights of rhythm and melody (poetry); others enjoy the feelings or mood aroused; and others are interested in the ideas conveyed. These types of pleasurable enjoyment do not exist singly, but in all sorts of combinations.<sup>3</sup>

*Must expression precede appreciation?* Disagreement exists on the question as to whether or not expression precedes appreciation. On the one hand we have the view that it is only by taking part in creative production that a wholesome and natural attitude of appreciation can finally be secured; <sup>4</sup> on the other, we have the assertion that the feeling aroused by creation or construction is not at all the same as the æsthetic emotion. According to this view, the feeling aroused by construction is due to the love of activity and of being a cause; appreciation is contemplative, and more or less passive. "One may readily enjoy sensory appeals and be trained to appreciation of the beautiful in sound, color, line, or proportion without developing any ability to create these lines, perhaps with only partial success in imitating others' work without offending good taste."<sup>5</sup>

<sup>3</sup> Thorndike, E. L. *Teach. Coll. Rec.* (1901), 2:195-200.

<sup>4</sup> Dewey, J. *Principles of Secondary Education*, edited by P. Monroe (1914), pp. 579-82.

<sup>5</sup> From Norsworthy, N., and Whitley, M. W. *The Psychology of Childhood* (1918), p. 88. Reprinted by permission of The Macmillan Company, publishers.

From the practical standpoint, there seems to be no doubt that creative production will give rise to appreciation. This is evidenced by the artist's delight in pictures. On the other hand, it seems equally true that most people can have their capacity for passive enjoyment and appreciation enlarged by education. This is shown by the number of persons who enjoy music but who are unable to play, to say nothing of being able to compose. It may be that those who deny appreciation to those taking no part in creative production consider that appreciation means more than recognition of quality or worth. Perhaps they include also that more complete understanding and sympathetic insight felt between two individuals of identical experiences.

**Architecture, sculpture, and painting.** As a people we are pitifully ignorant of the æsthetic qualities which make buildings artistic, or of the art which represents figures or objects in colors. We know almost nothing of the art which fashions objects in the round or relief out of stone. Our buildings are utilitarian, our pictures of the magazine-cover type. A feeble disposition toward compensation is evident in most schools. Here and there a bit of statuary is found; frequently there are pictures of considerable merit. However, we are so busy teaching the language of the ancient Romans that we have had no time for their art. It is in the exceptional school that pupils can do so much as give the names of the pictures which adorn the walls.

Life would be more complete if we availed ourselves of the artistic productions of the past. As a nation we would produce more men of artistic ability if we really appreciated art. There would be fewer "Main Streets" among the villages of the Nation, there would be more attractive homes, more beautiful streets, parks, and public buildings; there would be, for the most of us, a less barren existence.

**Music.** The important place already occupied by music



becomes evident when we remind ourselves of a few commonplace facts. A large majority of social gatherings of all sorts and descriptions are begun and ended with musical selections. The high-school assembly, the program of a woman's club, a play at a theater, or a Fourth-of-July address is considered incomplete without music. The number of musical instruments found in American homes is surprisingly large, and evidently is increasing. The phonograph and radio have brought music into homes formerly without it; the piano and other instruments are so common as to be matter-of-fact. The presence of a musical instrument usually means that some member of the family plays. The average citizen hears music perhaps not less frequently than once or twice a week. Thus the problem is not one of getting people to listen to music; it is one of improving taste and discrimination so that better music may be demanded.

*What is it that the untutored enjoy in music?* Most secondary-school pupils prefer what is commonly termed popular music. If a preference is to be cultivated for good music, it is necessary to analyze their preferences to find out what it is in music that appeals to them. For most people, the appeal is largely through melody and harmony, including rhythm. Technically, melody means a succession of agreeable tones so related to one another as to produce a distinct musical phrase or idea. An air of clear balance and form has melody. For the untutored, musical phrases must be short, simple, and clear; rhythm must be somewhat pronounced; and harmony must not demand fine tonal discrimination. Here Farnsworth<sup>6</sup> recommends that a few striking motives, upon which much music is based, should be learned so thoroughly that they can be easily recognized and

<sup>6</sup> In *High-School Education*, edited by C. H. Johnston (1912), pp. 323-24.

associated with the works to which they belong. This, he thinks, would guarantee intelligent enjoyment when these works are heard.

Musical appeal is also based upon the story told. The closeness with which the words and air of a song are associated illustrates this. Music which represents some force in nature or otherwise tells its own story requires a long stretch of the imagination of those with little acquaintance with classical music, and too much should not be expected at the beginning.

Familiarity always increases enjoyment, even for the connoisseur. Musicians of considerable accomplishment enjoy a concert more if they have previously heard at least some of the numbers to be rendered; they often take pains to go over the unfamiliar selections to be sung or played in order to increase enjoyment of the program. In an audience familiar with the old classical music, enjoyment is likely to give way to curiosity and later to boredom when a concert is given from the productions of the "modern" composers.

Interest may easily be aroused by a colorful and concrete biographical description of the composer, and an explanation of his purpose in writing the piece of music in question. Along with this should go such historical description as is pertinent. Similarly, interest may easily be stimulated in present-day orchestras, quartets, etc., of outstanding merit, and in contemporary artists.

Finally, pupils need to know something of the different musical instruments. They should be able to recognize the tone of instruments other than the piano or violin; they like to "ear out" from the *ensemble* now one instrument, now another. Some knowledge of the history of the violin, organ, or other instruments, their structure, and famous makers, would in no wise detract from the enjoyment of music.

*The method of gaining musical appreciation.* Let us imagine the case of a man who never has heard a note of good music, and who makes his first acquaintance with the true art by hearing Beethoven's "Ninth Symphony." There is a possibility that he might derive some pleasure from the experience. But the chances are that he would do nothing of the kind. Looking on the composition as a sample of art music, he would probably refuse ever afterward to have anything to do with it.

Suppose, however, that the experiment could be made of giving him a genuine education in the art of listening to music. A course could be laid out for him that would lead gradually, from the simple works suited to an unformed taste, to the greatest masterpieces. The course would begin perhaps with some stirring marches, such as Sousa's "Stars and Stripes Forever" and the "Soldiers' Chorus" from *Faust*. For the first year he would attend, two or three times a week, concerts made up of works on this general level — Strauss waltzes, folk songs sung by a good quartet and soloists, songs from the light operas of Gilbert and Sullivan and Victor Herbert. Let there be frequent repetition of the same numbers, each program containing some works previously heard and some new ones. Compositions of striking melodic design should be repeated often enough for the melodies to impress themselves on his memory, so that he will recall them in the intervals between concerts, and whistle or hum them for his own enjoyment.

A year's experience of this kind would almost inevitably awaken a genuine love for good music. The course would then be continued by introducing slightly more advanced works. The simpler songs of the great writers, — Schubert's "Serenade," Brahms' "Wiegenlied," Schumann's "Grenadiers," and others, sung, of course, in the language he can understand. Overtures of marked melodic character would be in place here, such as "Merry Wives of Windsor," "William Tell," "Semiramide." A gradual advance would be made, works of slightly greater complexity being introduced month by month. Within four or five years our student, if endowed with normal capacity for musical enjoyment, would be able to appreciate the greatest works of the masters.

Probably our student would adopt the habit of reading the program notes, and so gain an insight into the meaning of form. After attending a concert or opera he would read the comments of the critics, and thus become initiated into the trained observer's point of view. Everything essential to a genuine enjoyment and

love of good music could be mastered through a well-graded course of attendance at musical performances.<sup>7</sup>

**Literature.** Ends of literature teaching have always been the appreciation of good books, and the cultivation of habits of good reading. Specifically, it is believed that the particular results to be sought in the work in English literature include:

Ability to find pleasure in reading books by the better authors, both standard and contemporary, with an increasing knowledge of such books and increasing ability to distinguish what is really good from what is trivial and weak.

Knowledge of a few of the greatest authors, their lives, their chief works, and the reasons for their importance in their own age and in ours.

Understanding of the leading features in the structure and style of the main literary types, such as novels, dramas, essays, lyric poems.

The power to enter imaginatively into the thought of an author, interpreting his meaning in the light of one's own experience, and to show, perhaps by selecting passages and reading them aloud, that the book is a source of intellectual enjoyment.

Thus literature should open new and higher forms of pleasure; it should present to the pupil "noble ideals, aid in the formation of his character, and make him more efficient and actively interested in his relations with and service to others in the community and nation."<sup>8</sup>

Practically, we have not accomplished what we should. Important reasons for the failure of literature instruction to yield expected returns are, first, over-emphasis upon a few masterpieces and over-analysis of them. This has limited the range of acquaintance with books, and has stifled interest. Trained as literary critics, teachers have shown a

<sup>7</sup> From Taylor, D. C. *The Melodic Method in School Music* (1918), pp. 35-38. Reprinted by permission of The Macmillan Company, publishers.

<sup>8</sup> *Bur. of Educ. Bull.* (1917), no. 2, pp. 31-32.

tendency to impose their own methods and points of view upon secondary pupils, not realizing that the program called for something different from interest in literary form. Fortunately, reaction has set in, so that the trend now is to stress content and not form, and to replace the limited reading list with one including a large number of books.

Second, too wide a gap has separated the apperceptive power of the pupil from the background demanded by the selections assigned for reading and study. It is profitless to assume that reading interests will become what we want them to become merely because lists contain certain books. An often stated principle has it that improvement in literature appreciation must begin on the level of appreciation shown by students. We must learn to select literature not beyond a pupil's reach, even though temporarily it may not be of the highest type. Since the adolescent should gain experience along many lines, reading should be extensive rather than intensive in character. An extensive reading list allows for individual tastes and interests. It has been suggested that the material may well be of two degrees of difficulty: one to be handled in school with the teacher's help and guidance; the other sufficiently simple to be read with enjoyment without help.

Failure to be governed by the ends set up for purposes of guiding literature teaching, and unwillingness to accept enjoyment as an end, have done their share in nullifying the efforts of literature teachers. How an echo of the questions asked by a college professor about Shakespeare's use of words and Dickens's style, or an amateurish reproduction of college exercises in scanning poetry can impress high-school boys with a lasting interest in books is incomprehensible. Add to this the fact that the boy must constantly make use of notes to learn for the first time in his life what certain historical and mythological allusions mean, and we have

constructed the best possible situation to arouse dislike. In fairness to all concerned, however, it should be stated that English teachers realize that results have not always been commensurate with the time and effort expended. Ill-adapted methods are being abandoned or modified, and colleges are becoming less pedantic in their requirements. On the whole, rapid progress in improving literature teaching is being made.

*Pupils' reading interests.* A number of investigations <sup>9</sup> of the books and magazines which make an appeal to secondary pupils clearly show certain interests and tendencies in reading. Boys care little for books recommended to them by their teachers, but when left to their own volition choose tales of adventure and exciting outdoor life. They like physical action and swift movement. Popular themes are making the football team in the face of odds or at the expense of an unjust rival, saving some one's life, and gaining the upper hand of an unworthy opponent in physical combat. Frontier tales make a strong appeal. Boys prefer that the hero show self-control, loyalty, honesty, and trustworthiness. They are, in short, appealed to by stories based upon the instinctive impulses of mastery and rivalry, social approval, square dealing and kindness. Boys choose only members of their own sex as heroes, and manifest a strong favor for historical and public characters.

Girls prefer books of greater sentimental and emotional appeal. They do not care for Scott, Dickens, or Thackeray, but like novels of the day which concern daily life and manners. Favorite themes are pranks at school, being useful and honest at home, being loved and admired for one's own qualities, achieving success on the stage or high social position — all of which should be tinged with romance. Girls

<sup>9</sup> For a summary and for an original investigation see Jordan, A. M., *Children's Interests in Reading* (1921).



will choose men as heroes, although they prefer to emulate members of their own sex.

Both boys and girls like novels of the day which contain feeling and incident. They care little for books of science or travel; neither do they care for poetry, although girls manifest a stronger interest in poetry than do boys. A book is read for the story it contains, not for style of writing. Both sexes read much light periodical literature, including moving-picture magazines, although boys have considerable liking for those magazines showing the applications of science. Girls, on the other hand, prefer periodicals giving space to home arts and to fiction. Tables 53 and 54 indicate the reading interests at various ages for secondary-school pupils as determined by questionnaire. The preferences are typical of results obtained by other methods, notably a study of the books circulated in public libraries.

There is some evidence that reading interests improve during the secondary period. There seems to be, for example, greater consumption of classic fiction and poetry, although at no time do more than a fourth of all students manifest anything like keen interest in either. From what we know of the circulation of magazines and "best-seller" novels, it seems safe to assume that the literature read by high-school students is not greatly different from that read by adults. It is doubtful if persons of high-school or even college education read much classic fiction or poetry; it seems certain that they read much current literature, and it is to be hoped that it is of relatively high quality.

*Current literature.* When methods of teaching have been improved and refined, it may be that choice in reading will favor the classics, as many literature teachers hope. Notwithstanding, the current newspaper, magazine, and novel will continue to supply material for a great part of leisure reading. People will read current fiction because it can be

TABLE 53. MOST POPULAR BOOKS OF PUPILS OF SECONDARY-SCHOOL AGE. ORDER INDICATES PREFERENCE <sup>10</sup>

BOYS, AGE 12-13	BOYS, AGE 14-16	BOYS, AGE 17-18
Boy Scouts Series	Call of the Wild	Call of the Wild
Call of the Wild	Treasure Island	Tale of Two Cities
Treasure Island	Boy Scouts Series	Tom Sawyer
Motor Boy Series	Tom Sawyer	Ivanhoe
Robinson Crusoe	Ivanhoe	Huckleberry Finn
Huckleberry Finn	Kidnapped	When a Man's a Man
Billy Whiskers	Huckleberry Finn	Boy Scouts Series
Ivanhoe	Tale of Two Cities	Treasure Island
Tom Sawyer	When a Man's a Man	Trail of the Lonesome Pine
Penrod	White Fang	David Copperfield
White Fang	Freckles	Lorna Doone
Black Beauty	Penrod	Freckles
Little Men	Little Shepherd of Kingdom Come	Little Shepherd of Kingdom Come
Miss Minerva and William Greenhill	Sherlock Holmes	Shepherd of the Hills
Tale of Two Cities	Swiss Family Robinson	Lady of the Lake
Harvester	Motor Boy Series	White Fang
When a Man's a Man	Lady of the Lake	Virginian
Kidnapped	Shepherd of the Hills	Graustark
Lady of the Lake	Robinson Crusoe	Robinson Crusoe
Little Women	Lorna Doone	Penrod
GIRLS, AGE 12-13	GIRLS, AGE 14-16	GIRLS, AGE 17-18
Pollyanna	Little Women	Tale of Two Cities
Freckles	Pollyanna	Girl of the Limberlost
Little Women	Girl of the Limberlost	David Copperfield
Fairy Tales	Freckles	Shepherd of the Hills
Girl of the Limberlost	Ivanhoe	Freckles
Anne of Green Gables	Eyes of the World	Ivanhoe
Elsie Dinsmore	Tale of Two Cities	When a Man's a Man
Rebecca of Sunnybrook Farm	Laddie	Trail of the Lonesome Pine
Boy Scouts	Rebecca of Sunnybrook Farm	Little Women
Laddie	David Copperfield	Call of the Wild
Little Colonel Series	Camp Fire Girls	Eyes of the World
Little Pepper Series	Shepherd of the Hills	Lady of the Lake
Ben Hur	Little Shepherd of Kingdom Come	Little Shepherd of Kingdom Come
Black Beauty		

<sup>10</sup> Jordan, A. M., *op. cit.*, pp. 71-73. Data from Washington, D.C.; Lawrence, Kansas; Fayetteville, Arkansas; and Stuttgart, Arkansas.

Miss Minerva and William Greenhill	Little Colonel Series	Ben Hur
Life of Lincoln	Trail of the Lonesome Pine	Laddie
Tom Sawyer	Harvester	Merchant of Venice
Just David	Seventeen	Silas Marner
Little Men	Secret Garden	Anne of Green Gables
Last of the Mohicans	Tom Sawyer	Mill on the Floss
	Lorna Doone	Lorna Doone

TABLE 54. MOST POPULAR MAGAZINES OF PUPILS OF SECONDARY-SCHOOL AGE. ORDER INDICATES PREFERENCE <sup>11</sup>

BOYS, AGE 12-13	BOYS, AGE 14-16	BOYS, AGE 17-18
American Boy	American Boy	Popular Mechanics
Popular Mechanics	Popular Mechanics	Literary Digest
Youth's Companion	Literary Digest	American Boy
Popular Science	Youth's Companion	Saturday Evening Post
Literary Digest	Saturday Evening Post	American Magazine
Boys' Life	American Magazine	Cosmopolitan
Ladies' Home Journal	Popular Science	Youth's Companion
Saturday Evening Post	Cosmopolitan	Collier's
National Geographic	Boys' Life	Life
Review of Reviews	Life	Scientific American
Life	National Geographic	Country Gentleman
St. Nicholas	Red Book	National Geographic
Cosmopolitan	Collier's	Popular Science
Boy Scout	Everybody's	Independent
GIRLS, AGE 12-13	GIRLS, AGE 14-16	GIRLS, AGE 17-18
Ladies' Home Journal	Ladies' Home Journal	Ladies' Home Journal
St. Nicholas	Cosmopolitan	Literary Digest
Youth's Companion	American Magazine	Cosmopolitan
Pictorial Review	Youth's Companion	American Magazine
Woman's Home Companion	Pictorial Review	Good Housekeeping
Cosmopolitan	Woman's Home Companion	Saturday Evening Post
Saturday Evening Post	Literary Digest	Harper's
Literary Digest	Saturday Evening Post	Woman's Home Companion
Delineator	Woman's World	Youth's Companion
Woman's World	Delineator	National Geographic
American Boy	St. Nicholas	Pictorial Review
Life	Harper's	Delineator
Little Folks	Red Book	Woman's World
Red Book	McCall's	Life

<sup>11</sup> *Ibid.*, pp. 81-82.

understood and enjoyed without much mental strain and exertion, for it is written primarily for entertainment, relaxation, or amusement. It will be read because it reflects life as it is being lived in the present. Its problems are easily understood, emotions portrayed are similar to those of the reader, and descriptive phrases and sentences require no elaborate explanation. Read partly for entertainment and partly for purposes of information, the newspaper and the news periodical consume much of the total reading time.

Perhaps in no other single way could more be done toward actualizing the educational end of worthy use of leisure than through improvement of taste in current literature. Teachers of English and teachers of the social sciences have long employed in their classes the current news periodical. Less has been done in teaching pupils to read newspapers and only scant attention has been given to the periodical and the novel. We must not only train young people to use these sources economically, but we must also teach them to distinguish the good from the poor. Methods in news-gathering, the reliability of various news agencies and organs, the significance of advertising, editorials and editorial writers, are points which should receive attention. Current magazine fiction and the current novel should occupy a more prominent place than has yet been accorded to them. It should not be impossible to teach young people to discriminate the good from the bad, nor to help them in improving their tastes and preferences.

**The drama and the moving picture.** The drama is a story put into action — a story of life told by direct representation of human action and human characters. The element of mimicry, fundamental to the acted drama, is a part of human nature. Thus the drama has always struck a responsive chord in the minds and hearts of every race and every people. The Greeks, to whom we trace much of our

system of thought and many of our institutions, saw in the tragedy and the comedy great possibilities, which they utilized to the utmost, both for entertainment and for education. During the Middle Ages, the miracle plays were used for popular education in religion; during the Renaissance, the drama actually entered the schools and was there used as an educational instrument. Froebel regarded dramatic representation as an integral part of the kindergarten method. Recently, dramatization has penetrated the elementary grades and even the secondary school. Its possibilities are so great that many see in the twentieth century a revival of the time when the drama was one of the chief educational agencies.

It is not with dramatization as an educational method that we are primarily concerned here, great as its possibilities are. Our purpose is forcibly to call attention to the fact that the theater in its various forms is, and will continue to be, one of the chief diversions of the American public. There can be no question that the influence it exerts is profound. Least of all can adolescent boys and girls live, even in imagination, the story shown on the stage or screen and escape without some modification of outlook. Plato recognized that one gradually becomes what he imitates, and insisted that Greek youth be given only that subject-matter and portrayal of character calculated to draw out the best in human nature. The school will fall short in its duty unless it makes an effort to improve in so far as possible this type of recreation.

*The drama and the literature class.* The play has long furnished a part of the subject-matter of the literature class. Its teaching has not been free from the faults which have marked the instruction in the other usual literary types. There have been the same emphasis of a few masterpieces, the same unwarranted assumption of interest and under-

standing on the part of pupils, and the same unwillingness to accept enjoyment as an end. As emphasis must be shifted from technique to content in teaching the novel, so must stress be moved from the technique of the drama to its story.

In one important respect the play differs from the novel or short story. The former was written to be spoken and acted; the latter, to be read. The play is therefore likely to demand a background of understanding which the author of the novel takes pains to include. This difference is more pronounced if the play is not a current one. Moreover, meaning conveyed by intonation, gesture, or facial expression may be lost if the play is silently read. It therefore seems that oral reading by competent teachers or students could well be substituted for much of the assigned silent reading of plays.

*Amateur theatricals.* Interest in plays and acting is general. Pupils compete with each other for places in the class play, and the students attend its presentation *en masse*. School patrons will attend a school play if anything. Given a competent director, and the home talent production usually wants neither for actors nor for an audience. Social workers find that they are able to interest the young people of a community through amateur theatricals if they are able to interest them at all. The lesson is not far to seek. It is that more and better use should be made of the drama as a means of enjoyment.

*Motion pictures.* Perhaps the most stupendous growth of a particular type of amusement ever witnessed has occurred in the motion picture. In 1895, the first year of commercial film manufacture, the total production was 21,663 feet — slightly over four miles; in thirty years manufacturers increased their output to 65,000,000 feet a month, or over 150,000 miles a year. These films are shown in the Nation's 17,900 motion picture theaters, to which one fifth of the



total population go each day, and which about sixty-eight per cent attend more or less regularly. As computed from the ten per cent admission tax, the people who attended picture shows during the year ending in June, 1921, paid over \$906,000,000 for their tickets.<sup>12</sup> In 1920 the expenditures for education were \$1,036,151,209.

TABLE 55. FREQUENCY OF ATTENDANCE OF HIGH-SCHOOL STUDENTS AT THE MOVIES <sup>13</sup>

RATE OF ATTENDANCE	BOYS (per cent)	GIRLS (per cent)
No attendance during a four-week period.....	14.0	15.9
Not more than once a week.....	43.3	46.0
More than once but not more than twice a week.....	26.0	26.4
More than twice but not more than three times a week.....	10.4	8.3
More than three but not more than four times a week.....	3.7	2.5
More than four times a week.....	2.6	.9

Total number of boys, 17,310; girls, 20,195.

Table 55 shows the frequency with which high-school students, according to their own statements, attend moving picture shows. In explanation, it might be said that these pupils live in many different States and in all types of communities, so that their statements are probably representative of the high-school boys and girls of the Nation. It will be noticed that only fourteen per cent could be said not to attend regularly, and that the average boy or girl goes five or six times a month. By some this might be considered excessive; others may be inclined to hold an opposite view. At any rate, none will deny that attendance upon moving pictures forms one of the chief diversions of secondary-school pupils.

<sup>12</sup> Figures from the *World Almanac* (1925), p. 539.

<sup>13</sup> Perry, C. A. *Sch. Rev.* (1923), 31:573-87.

**Play, sport, and outdoor life.** Many persons are employed in occupations sedentary in nature; many others are engaged in work which keeps them indoors. Both classes would profit from such types of recreation as outdoor play, sports, and tramping. Seldom it is that a new sport is begun after school days are over, hence the advisability of developing interests and skill in outdoor games, tramping, or excursions while boys and girls are still in school. At this point it is well to call attention to the fact that most of the inter-scholastic games cannot be followed in later life. Such games as tennis, golf, and handball, and such sports as rowing, swimming, and tramping offer recreation to every one. Our physical education program should do more to develop them, not only because outdoor play is important to the health of all children, but also because interests will be developed which in later life will influence the individual to take a part of his recreation out of doors.

A walking trip is uninteresting to most persons and hence avoided unless other interests and activities are attached to it. These may, of course, be many and varied. However, the person who knows animal life, who can recognize the plants and trees, who knows mountains and rivers, who appreciates Nature's display of color, and who knows something of the romance of the heavens and the wonders of the earth's formation, will always find something re-creative in his excursions.

**"Social" diversions.** People gather together apparently for no other reason than to enjoy each other's society. However, closer scrutiny of the ordinary social gathering reveals the fact that the company has collected for a particular purpose. It may be for some form of amusement or entertainment, to listen to a discourse intended for instruction, or for any one of a number of reasons. If one is to enjoy such activities he must at least be an intelligent listener, if he is to

contribute to the enjoyment of others he must at least be able to carry on intelligent conversation without abashment or mental confusion. The school of the old type, with its orderly classes, orderly passing, and its exclusive devotion to academic classes, offered but little training for such activities. The modern secondary school, with its socialized recitations, club activities, student participation in school government, parents' days, student ushers, etc., should prepare its pupils for participation in "social" activities by the best of all methods — actual participation itself.

### TOPICS FOR DISCUSSION AND INVESTIGATION

1. Investigate the work of the Junior Achievement Bureau, Springfield, Massachusetts, in providing leisure-time employment.
2. Contrast present methods of spending leisure with those of twenty-five or fifty years ago. Contrast the leisure-time activities of the present generation of secondary-school students with those of ten or fifteen years ago.
3. Give historical examples to substantiate the statement that leisure is the parent of the arts and sciences.
4. What are the instinctive bases of art? Of science?
5. Do the rules of art conform to something inherent in human nature, or do we enjoy only the art we know? Why do modes of art change?
6. How does the subject of your special interest contribute to worthy use of leisure?
7. Describe the "music memory contests." (See Briggs, in bibliography.)
8. Discuss art and æsthetic dancing as forms of expression.
9. What is your community doing to provide leisure-time activities? What could it do?
10. Should amusements be commercialized? (See Addams, Jane, *The Spirit of Youth and the City Streets*.)
11. Should a principal expect his teachers to assist in the leisure activities of pupils?
12. How did the Greeks utilize the theater for educative purposes?
13. Parker makes the statement that there is no necessary connection between good art and good morality. (*Methods of Teaching in High Schools*, page 250.) If this is true, is there any valid reason for including art subjects in the curriculum?
14. Can the ability to appreciate literature, music, or art be measured objectively?

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## CHAPTER XIX

### HEALTH EDUCATION

**Verbal acceptance of the health aim.** Why it is that the Nation as a whole has accomplished so little toward realizing the health aim in education is difficult to understand. Educational theorists argue for it, school administrators readily admit its importance, and school patrons profess concern about the health of their children. Perhaps we are still in the grip of a tradition which influences us to believe that education is primarily a thing of the intellect. Whatever the cause, there is probably no educational objective which has had theoretical support for a considerable length of time, toward reaching which so little has been done.

Numerous statistics are at hand showing the need of health education. Such statistics indicate, among other things, the state of health of school children and their common physical defects, the number and kind of physical and mental ailments among the adult population, and the economic loss due to ill-health.

*Physical defects among school children.* Figures showing the number of physical defects among school children vary considerably, owing to different standards of investigators and conditions under which examinations were made. Even when the most conservative figures are taken, however, the numbers are alarmingly high. Table 56, compiled from the records of the department of schools in Boston, gives an idea of the prevalence of physical defects among school children, and shows what may be accomplished by a systematic attempt to relieve them. A defect not listed in the table but which should not be omitted is malnutrition. It is pro-



bably correct to say that from ten to fifteen per cent of the children of the Nation are suffering from malnutrition to such an extent as to be a cause of serious concern. In some localities fewer are affected; in others, twice as many.

TABLE 56. PERCENTAGE OF CHILDREN SHOWING SPECIFIED DEFECTS, BOSTON CITY SCHOOLS<sup>1</sup>

YEAR ENDING JUNE	DEFECTIVE VISION	DEFEC- TIVE HEARING	DEFECTIVE NASAL BREATHING	HYPER- TROPHIED TONSILS	CERVICAL GLANDS	SKIN DISEASES	DEFECTIVE TEETH
1916..	12.9	2.8	7.3	18.5	18.9	3.1	....
1917..	11.6	1.8	6.3	14.1	7.4	2.8	....
1918..	11.6	1.0	5.8	13.4	6.9	2.2	48.2
1919..	11.5	1.8	6.1	12.7	4.7	1.9	44.3
1920..	11.4	1.7	6.4	13.3	3.2	1.6	43.3
1921..	11.1	1.5	4.7	12.3	2.1	1.6	40.6

*Physical defects among the general population.* The need for health education was forcibly brought to the attention of the Nation by the number of men who were found physically unfit for military service in the World War. In 12 States 20 to 30 per cent of the draft registrants were rejected; in 13 States, 31 to 35 per cent; in 10 States, 36 to 40 per cent; in 13 States, 41 to 50 per cent.<sup>2</sup> These figures become more significant when it is remembered that the majority of these applicants were from 21 to 31 years of age — the age when, if ever, they should withstand physical examination.

*Economic loss due to ill health.* We have every reason to believe that a large proportion of physical defects can be overcome and that much disease may be avoided, with an enormous economic saving to the individual and to society. Of the rejections from the army listed above, for example, it

<sup>1</sup> Quoted by Winslow, C.-E. A. In *The Child: His Nature and Needs*, edited by M. V. O'Shea (1924), p. 217. Reprinted by permission of The Children's Foundation, publishers.

<sup>2</sup> Ayres, L. P. *The War with Germany* (1919), p. 20.

has been estimated that more than half were for ailments which could have been overcome or prevented had the individual known and practiced the commoner laws of hygiene. Again, it has been computed that forty-two per cent of the number of deaths that occur in the United States each year are caused by reasonably preventable diseases, that approximately three million persons are constantly seriously ill, also largely of preventable diseases, and that fifteen years could be added to the average life by hygienic living. A very large number of persons suffer from minor ailments which lower their efficiency or cause at least temporary absence from work. The combined loss each year through preventable illness and preventable or postponable death has been estimated to be near a tenth of the average income for every family.<sup>3</sup> Another estimate makes twenty-five per cent of all poverty and destitution due to sickness.

It has already been shown that ill health is an important cause of absence from school, and that absence from school hinders successful work (Chapter IX). Those in charge of the schools have learned that it is next to impossible to teach a child handicapped by physical defects or suffering from malnutrition or incipient disease. Considerable increase in the efficiency of the school would result from a thorough program of health.

**Present status of health education.** Writing in 1918, Inglis asserted that woefully inadequate provisions were made for physical education in the public secondary schools.<sup>4</sup>

In the great majority of public secondary schools little or no provision is made for gymnasiums, no qualified teacher is employed for physical training or even for the teaching of hygiene, athletics are supervised and directed by teachers with few or no qualifications, no adequate machinery is provided for physical examination

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<sup>3</sup> Rapeer, L. W. *School Health Administration* (1913), chap. 1.

<sup>4</sup> Inglis, A. J. *Principles of Secondary Education* (1918), p. 641.

or even for medical inspection, and what little physical training is given is of a formal and perfunctory character. The common provision, even in some of our best schools, of two periods per week in gymnasium exercises, is little more than a pretense of education.

*Recent legislation.* Since Inglis wrote, some advance has been made toward extending health education. Influenced by the results of physical examinations during the war, a number of States passed laws requiring physical education in the schools. Thirty-one had in 1925 mandatory or permissive laws for physical education in high schools. However, it is likely that this legislation represents a series of steps preliminary to the establishment of an effective program, so that Inglis's statement is essentially true to-day. Many of the laws make only perfunctory requirements, and some have been repealed. Due to lack of trained teachers and to lack of other facilities, the requirements of the law are not wholly met in certain other States.<sup>5</sup>

Bills requiring physical education were introduced into the legislatures of several other States, but they failed to pass. Rejection was urged usually upon the grounds of economy. Such economy is of course ill-advised, and shows failure to understand the purposes of physical education rather than the poverty of the State. For example, the legislature of a wealthy Middle-Western State passed a bill for an increase of appropriation for tuberculosis among cattle from \$100,000 to \$250,000 per year, while it rejected the proposition to raise the fund for the investigation of

<sup>5</sup> See *Educ. Rev.* (1922), 63:57, 81. The Fess-Capper Bill, introduced into the National Congress in 1921, failed to become a law. It provided for a fund to be distributed through the state departments in proportion to the number of children in the State between six and eighteen years of age. It gave no State more than the amount already appropriated by the state and local authorities for the same purpose. To secure permanent aid, the States were required to provide within five years opportunity for physical education for all persons between six and eighteen.

tuberculosis among human beings from \$5,000 to \$10,000. This State also failed to pass bills for compulsory physical education and public health nursing. The attitude is typical of several other States which have refused to pass laws to improve the health of their children, but have authorized heavy expenditures for investigating diseases among live stock or pests among farm crops.

*Education of public needed.* The subjects taught in a school, or activities connected with it, reflect the desires and demands of the public, and it is evident that the public as yet does not ask for a comprehensive program of health. Nevertheless, many, perhaps the majority, of school administrators could do more than they are now doing to promote such a program. To some, health education means merely two or three periods per week in the gymnasium and a few lessons in hygiene; many others are conversant with the theory, but are slow in using their influence in establishing the health program.

Even when administrative officers and boards of education are convinced of the desirability of a change, they are slow in initiating novel methods and in extending them to all parts of the system. The explanation is found in the fact that they cannot move, even when legal authority is clear, without adequate funds, and the appropriation of funds is dependent in the last instance upon public approval. At present we need a campaign to educate the public in health matters and to show the place of health instruction in the schools. Such a campaign should assist greatly in creating a public demand for health education.

*Aims of health education.* A program of health education has its individual and its social aspects, although no sharp line divides them. From the standpoint of the individual, the primary aim is the establishment of permanent habits of healthful activity, both physical and mental. This de-

mands a plan for eradication and prevention of those defects and diseases which are eradicable or preventable. Social hygiene requires reasonable knowledge of advances in preventive medicine, knowledge of the prevention or limitation of disease, and participation, so far as conditions will permit, in regulating conditions conducive to health and in stamping out epidemics.

*Personal hygiene.* The importance of physical vitality to working efficiency and to happiness is so well understood as to require no elaboration. Less well understood is the fact that many persons are physically below par, and that through personal hygiene they might have a greater amount of energy and enthusiasm for their work. To bring the organism to the highest possible state of physical efficiency is the objective of personal hygiene.

Physical examinations, given at stated intervals, are a necessary part of an effective program of personal hygiene. They have for their object the detection of physical defects, and they should be followed by measures to correct in so far as possible the defects discovered. Physical examinations should also include a study of the growth of the pupil and a close correlation of the conditions found with the activity prescribed.

Class instruction and physical activities have for their goal the establishment of habits and ideals of health. In many elementary schools this program will have been inaugurated and carried forward considerable distance, but it will not have been completed. Therefore, in the junior high school training in habits of cleanliness, correct breathing posture, use of individual drinking-cups, care of the teeth, eyes, nose and throat, skin, etc., must be continued. In the senior high school these habits should not be allowed to lapse, and to them should be added other desirable knowledge and habits, such as the understanding of food values,

the principles of hygienic dress, and the like. Throughout the secondary school pupils should be encouraged to participate and to develop interests in games, sports, walking, swimming, and other physical activities. Pupils need such facts of physiology, anatomy, biology, and other sciences as will help them to understand the principles of hygiene.

*Social hygiene.* Preservation of his own health is not the only responsibility of the citizen; he is concerned with the solution of health problems in the community. Such an attitude is best cultivated in pupils by encouraging and allowing them to participate in community activities whenever opportunity occurs. In case of an epidemic of measles, whooping-cough, or influenza, pupils can be taught the nature of the disease, its symptoms, its effect, methods of transmission and means of eradication. Medical inspection has for its primary function the detection and elimination of contagious diseases, but it offers a valuable means for teaching the foregoing principles. Such a method of procedure would bring the school into contact with local health authorities and in many instances would present an opportunity for a certain amount of field work in which health problems could be studied. It could easily involve historical and descriptive reading, and as interests are awakened and expanded it would be possible to present technical matters pertaining to disease.

Pupils are interested in the war that has been waged in this and other countries upon yellow fever, tuberculosis, smallpox, typhoid fever, etc., and the success attendant upon these campaigns. Among others, they might learn the story of Gorgas and his work in Cuba; they might acquaint themselves with the part sanitation played in the construction of the Panama Canal. They should be aware of the dangers that attend sedentary occupations, and understand that cancer, Bright's disease, heart disease, and pneumonia



are becoming more and more threatening; they should understand the nature of the attack now being made in this direction.

*Industrial hygiene.* Good health means that the individual can be a social asset and not a liability, for he will be able to move his own economic load. The first step toward insuring good health to the worker is training in personal hygiene; the second is the extension of the field of social hygiene to include industrial and occupational hygiene. In connection with his study of the occupations or with some other aspect of the program of studies, the pupil needs to consider the physical demands of an occupation and whether or not he will be equal to them. Also, he needs a knowledge of the hygienic conditions under which work is done and the diseases which are commonest among certain kinds of workers. He should know that, without special attention to his health, the average worker loses nearly a tenth of his annual income through illness. Finally, he cannot afford to be ignorant of the protection against financial loss through illness provided by insurance, workingmen's compensation laws, etc.

During the last half dozen years there has developed a marked tendency for life insurance companies and industrial concerns to protect and improve the health of their policy-holders or employees. The majority of the important life insurance companies give periodic examinations and advice on health matters to those policy-holders who care to avail themselves of these advantages. Some publish health pamphlets and even provide visiting nurses. Many business concerns have improved the hygienic conditions under which their employees work, and have provided facilities for correcting defects due in part at least to the nature of the work. Some have gone further and provided lectures or pamphlets on health topics, visiting nurses, and physicians whom em-

ployees may consult. Free milk may be dispensed in the middle of the morning. Many concerns have rest-rooms and club-rooms, gymnasiums, tennis courts, athletic fields, and swimming-pools. The home conditions of employees are also considered in many cases, and the health of other members of the employee's family is not neglected. The leading motive back of all this work is probably an economic one; however, employees as well as employers benefit.<sup>6</sup>

**Sex education.** Every one admits that boys and girls must be taught certain facts and principles of sex hygiene. It is likewise a consensus of opinion that instruction is best given by parents. As a matter of fact, however, parents do not meet their duties in this respect.<sup>7</sup> The situation in which the school finds itself is somewhat as follows: The school assumes those functions and duties which should be performed and which other social agencies do not perform. Sex education by common consent belongs to this category. Should the school undertake sex education?

The belief that sex instruction should be given in the schools has evidently gained ground. Results of a questionnaire returned by a large number of school officials

<sup>6</sup> Schirmer, C. A. *Am. Phys. Educ. Rev.* (1925), 30:59-64.

<sup>7</sup> "The sensible, sympathetic father who takes his fourteen-year-old boy into his confidence and who talks to him frankly about the changes which are going through and within him is so rare as to be a negligible quantity in the discussion of the boy and his problems. Ninety-five per cent of the boys who enter college from high school will say, if asked, that their fathers have never so much as mentioned to them anything that had to do with sex or adolescence. What the boy learns at this time about his body and about the mysteries of life generally comes from boys as ignorant as himself, or more likely than not from some one who is not only ignorant but whose moral ideals are low and whose tendencies are vicious. It is the rowdy and the street loafer, and the nomadic hired man who has picked up his facts from the gutters, and the ignorant and the vulgar minded who solve our boys' sex problems for them — more's the pity!" From Clark, T. A. *The High-School Boy and His Problems* (1920), p. 3. Reprinted by permission of The Macmillan Company, publishers.

showed that a majority of them voted affirmatively upon this question. If their replies are representative of the secondary schools of the country, it appears that more or less effective instruction in sex hygiene is given in a fifth of all secondary schools.<sup>8</sup>

Problems of sex education which have not been satisfactorily solved have to do with the time instruction should begin, subject-matter or content of the course, and with the teaching arrangement. While no attempt will here be made to arrive at a final solution of these problems, a statement of what seems to be the present consensus of opinion regarding each of them will be given.

*When should instruction be given?* Instruction is best given not later than the period at which puberty is reached. It should probably be given before. Boys and girls should not be left in ignorance of the changes through which their bodies pass, nor should they be allowed to gain partial or perverted knowledge from improper sources.

*What is the content of instruction?* The general view of the content of instruction is well expressed by Wile when he says:<sup>9</sup>

Some educators are carried away by the idea that merely teaching the facts of reproduction constitutes sex hygiene. Various other teachers and writers regard the facts concerning the social evil, venereal diseases, or eugenics, as the main elements of information to be imparted in sex hygiene. These conceptions are obviously limited. While each constitutes one phase of the sex problem, it by no means encompasses the field of sex hygiene. . . . Sex education includes the natural training of children along normal lines in their duties and responsibilities for the development and maintenance of their manhood and womanhood, and involves preparing them for their highest duties as the potential parents of

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<sup>8</sup> Edson, N. W. *School Review* (1921), 29:593-602.

<sup>9</sup> Wile, I. S. In *Educational Hygiene*, edited by L. W. Rapeer (1915), pp. 547-66. Charles Scribner's Sons, publishers.

future generations. A slight knowledge of anatomy is essential. Physiology naturally must be interpreted in terms of hygiene. All instruction would fail in effective results were it not based upon an intelligent understanding of sex psychology and sex ethics. The methods of imparting instruction would be blind and chaotic without a full appreciation of the methods and values bound up in sex pedagogy. Sex knowledge, sex understanding, and sex interpretation are equally indispensable. . . . As normal boys and girls have acquired a large measure of their sex lore before puberty, the informational character of sex education in the high schools must possess a correctional bent. . . . With some limitations, sex education in the high school possesses a prophylactic value. The young adolescents, conscious of new physical sensations and emotional stimuli, require careful guidance so that the interpretation of their physical and emotional development may be sanely directed toward high ideals.

*Method of instruction.* According to the questionnaire returns referred to above, high-school principals favor, not segregated classes nor instruction through pamphlets, lectures, etc., but instruction that is made a part of other subjects and activities.<sup>10</sup> Like moral education, sex education is inseparably interwoven in the fabric of general education. Pedagogical justification for this position is similar in both instances. All the subjects can contribute, but biology, the social sciences, hygiene and physiology, physical education, and the fine arts offer the greatest possibilities. Approach to the topics is best made, not from the negative or pathological side, but through positive teaching and from the standpoint of instilling worthy knowledge and developing worthy habits and ideals.

*Organization of teaching materials.* Modern psychology teaches that the muscles are the organs of expression for the mental processes, and gives the older pedagogical principle exemplified by laboratory work a newer significance. Ac-

<sup>10</sup> For an excellent description of the method of attack in instruction, see *Character Education Methods: The Iowa Plan* (1922), pp. 34-35.

cording to this principle, the demands of health education would best be met in a school where the mental is not set over against the physical, but where habits of healthful activity are inculcated through the different school activities. As schools are now organized, such a program is almost if not entirely unattainable. While it is true that modern educational theory recommends the introduction of more of the activities of the laboratory, shop, kitchen, school garden, and a more active participation in community affairs, by far the largest per cent of the total time spent in the average school is in pursuit of subjects organized in such a way that the minimum of physical activity is demanded. Even the industrial arts, which so often mean one or two periods per week of manual training or home economics, make their greatest demands upon the finer muscular coordinations and can hardly be called activities through which desirable physical training is gained. Thus it becomes necessary for the school to provide specifically for training in hygienic knowledge and principles and habits of exercise.

The nature of physical education is of course conditioned by the nature of those receiving the training. The junior high school particularly must take into account the characteristics of young people of twelve to fifteen or sixteen years of age. The familiar curves of growth show during these years a great increase in height, and a rapid increase in weight due in large measure to the growth of the large muscles. There are changes in the circulatory system and an increase in blood pressure, as well as greater lung capacity. The vital index, or ratio of lung capacity to weight, is one of the best criteria of health and vigor, and it is noteworthy that in the opinion of many it would be increased at this time, especially in the case of girls, by proper exercise. Individual differences are characteristic of all measurements. These and other aspects of growth have been discussed in a



previous chapter. Here it remains to point out that the facts of growth find one of their chief applications in planning the health program. Students in this field are in agreement that girls should receive especial care and attention, and that they should be relieved as far as possible of nervous strain and excitement when they are entering the adolescent state. A scrutiny of physical education programs now in operation, can only lead to the conclusion that but little account is taken of the factors of growth during adolescence in planning programs of physical education.

*Gymnastics.* Gymnastics may be separated into two main divisions: calisthenics, or free movements of the arms, legs, trunk, exercises with dumb-bells, wands, etc.; and work with apparatus, such as parallel and horizontal bars, ladders, ropes, weights, and so on. In constructing the exercises account has been taken of the structure of the body and of the effect of the type of exercise upon muscles and organs. The object of each exercise is to secure motor coördination, hygienic benefit, or some æsthetic effect. For gymnastics as a whole the results claimed are that normal physical development is stimulated, good carriage is promoted, and ease of coördination in motion and locomotion is produced.

The difficulty has been that gymnastics have proved uninteresting and hence lacking in effectiveness and recreative value. Teachers have on the whole been unable to inspire interest, for the usual gymnasium class is likely to be conducted in a formal, mechanical manner. Since the effectiveness of the exercises depends to a great degree upon the attitude of the pupil and his consequent manner of execution, it is doubtful if the values claimed for gymnastics have been secured to any considerable degree. Certain it is that many pupils use every possible excuse for avoiding gymnasium classes, and that they do not gain permanent habits of exercise or interest in physical activities.



Gymnastic exercises should not constitute the whole, or even the major part, of the physical exercises of pupils. For normal pupils, exercise is best provided in connection with plays and games. For pupils possessing certain physical defects and weaknesses, appropriate corrective exercises are greatly needed.

*Play, games, and dancing.* Gymnastics involve specific movements designed for the development of particular muscles or groups of muscles, and for their proper execution attention must be centered upon, and the mind of the individual absorbed in, the execution of the movements. The view is now coming into prominence that gymnastics are not so well suited to the needs and powers of the organism as exercises involved in games, where there is little or no consciousness of the details of the movements executed and where there is a far larger element of recreation and pleasure. It is held that when games are properly regulated and applied there is no aim of physical education which they do not meet better than any other form of activity. They are hygienic to a degree that other forms of exercise usually are not; and in the development of intellectual, moral, and social qualities they surpass all other forms of exercise. Play is enjoyed for its own sake and it thus leads to permanent interest in healthful exercise. This view has had much influence and has been a prominent factor in the development of the present tendency to substitute play and games for formal gymnastics.

Dancing is a form of motor activity which, in the minds of many, may well comprise a considerable part of the physical activities required of girls in the gymnasium, but only a limited part of that required of boys. The dance brings motive into its movements through rhythm, and meaning is given to form through imitation, as well as by dress, speech, and song. It may be used as a form of expression of worthy

feelings and emotions, and it can do this without losing any of its hygienic and recreative values. Folk dances are now coming into prominence, and they may be correlated often with the work of the school and with seasonal interests.

Games are best selected from the standpoint of the natural interests of pupils and from the standpoint of educative values. The rise of the gang spirit, with an increased desire for adventure, is one of the important characteristics of the pubescent age. Most boys belong at some time to a gang, and the years ten to seventeen, particularly eleven, twelve, and thirteen, are those in which membership is commonest. The motivating interest in spontaneously organized gangs is, in the majority of cases, physical activity. At this time interest in imitative and make-believe games and in games of chase declines, and interest in games of rivalry, team-work, and athletics of all sorts increases. The school can make use of these characteristics by providing opportunity for group organization and participation in games and hardy sports, hikes, camping-out, and similar activities.

Many lists of games are available, so that selections can be made with reference to the problem at hand. In general, there is need for games involving group or team play, a certain amount of competition but not much room and equipment, and games all can play. Exercise is most wholesome when it takes place in the open air, and when it involves the use of the muscles of the legs, back, shoulders, and especially those controlling the chest, heart, and lungs.

**Interscholastic athletics.** That practically every secondary school supports one or more athletic teams which contest with other teams is a fact of which every one is aware. There was a time when high-school athletics met opposition; next came a period of toleration, for it was realized that boys would play in spite of opposition; then a period of coöperation, when control of athletics was taken

over by the school, rules regulating contests were drawn up, and "coaches" supplied for the teams. A real danger now arises from the fact that many schools are practically dominated by athletics. More and more they have come to be planned for the spectators and have served as a means whereby one community contests for supremacy with another. This destroys general participation, encourages the desire to win, causes individuals of exceptional ability to be sought out and trained to the limit, while the remaining 90 or 95 per cent are more or less neglected.

*Athletics are over-emphasized.* The stress that a school and its community may place upon the success of its athletic team is illustrated by an Eastern city which recently experienced a calamitous football season — that is, most of the games were won by opponents. The city superintendent of schools, the high-school principal, and the board of education instituted an active search for a coach who could turn out winning teams, and they were aided and abetted in their efforts by many of the alumni of the institution. They finally decided upon a candidate from a neighboring community who had shown to a remarkable degree the qualities for which they were so zealously searching. To secure this candidate, they paid the maximum salary to high-school teachers which was to be earned by teaching certain subjects, plus an equal amount for coaching football and track athletics. The total salary was in excess of that paid the high-school principal and nearly as much as that received by the superintendent of schools. Any one at all acquainted with the high-school athletic situation will be able to furnish similar examples.

*Health values of athletics.* As they are now conducted, interscholastic athletics contribute to health education by stimulating a certain number of students to try out for the teams and thus to engage in athletics, and by setting stand-

ards and ideals of hygienic living. Their total contribution, however, is only a small fraction of what it might be. It will remain small until some means is found of extending to every pupil the benefit of the athletic program. Efforts have from time to time been made to extend the program but progress has been discouraging. The movement has not been able as yet to check the tendency to commercialize secondary-school athletics.

It is at least extremely doubtful whether the interscholastic games of the high schools, to such a large extent a penetration of collegiate athletics, should percolate into the junior high school as they are now doing in so many places. The games themselves are often not suitable for children of junior-high-school age, making as they do great demands upon endurance, especially of the heart. It may be that some inter-school competition is desirable, for every director of play and athletics knows that certain advantages accrue from inter-school competition that are hard to attain through other agencies. Administrative officers should anticipate the difficulties, and formulate at the beginning a plan for athletics.

*Athletics for all students.* A plan is in operation in New York which seems to be very successful in extending the benefits of athletics to the mass of students. Tests of physical ability of pupils in the seventh and eighth grades and in the high schools were made by the physical education staff of the state department of education. The tests included in 1920 nearly three hundred thousand school children in 56 cities and 203 villages, or more than half the cities and villages of the State. In order to secure fairness in competition the State was divided into districts. Each district had its junior and its senior division. Certificates of award were issued to schools on records of boys, on records of girls, and of boys and girls combined. Scores were compared for sec-

tions, for divisions, and for the entire State, and for each year in school of the pupils competing. The events for the boys were running one hundred yards, climbing, chinning the bar, and standing broad jump. For girls the events were running fifty yards, running and catching, and throwing a basketball.

**Subjects contributing to health knowledge.** Health education is not on a par with other school subjects, such as English, history, or mathematics. In the latter, more or less definite objectives are set up, courses of study are outlined, and requirements are made of all pupils. This is not true of hygiene and other subjects contributing to health knowledge. Objectives governing instruction are not so clearly formulated, and the requirements levied against the pupils are not extensive. The large high schools surpass the offerings of the small. Often, although not always, they provide at least two periods of instruction in physical education, of which hygiene is often a part. Most of the time is spent in gymnastics, floor work, and games, although corrective exercises are also found.

*Hygiene and biology.* Since hygiene is a system of principles or rules designed for the promotion of health, it is to be expected that a major part of health knowledge would come from this source. A difficulty is, however, that instruction in hygiene is not sufficiently systematic and extensive. Even in the junior high school provisions are often inadequate. It is not so much a matter of concern that subject-matter be grouped together and given the label of a specific course as it is that it shall be taught and well taught. Of subjects other than hygiene which function in teaching health, biology is one of the most important. Of late years it has incorporated much of the material formerly taught in physiology. From the standpoint of the problem before us, however, the difficulties are that the course is usually a

semester or at most a year in length, that it is offered in the ninth or tenth grades, and that it is usually elective.

*Social sciences.* The work in social sciences is being enlarged by the addition of community civics to the junior high school and of elementary sociology and economics to both the junior and the senior high schools. An examination of the commonly used textbooks shows that the topic of health is at least touched upon in every case. Usually, the individual's responsibility in community, state, and national health problems is stressed. Such topics as pure-food laws and the part that public opinion plays in bringing about reform are the important materials from the standpoint of national health. Other topics which are often included are medical inspection in schools, city provisions for safeguarding the health of its inhabitants, the health conditions under which the laboring classes live. Occasionally field work of the nature of inspection of hygienic conditions of the community is undertaken.

General science is now the most important science, judged on the basis of the number of pupils reached, found in the secondary school. While there are a few schools where it is not offered, and many more where it is elective, the majority of students pursue the subject. Water supply to cities, disposal of waste, and the means by which diseases are transmitted are examples of topics pertaining to health which are usually found in general science.

*Home economics.* It is in the home economics courses that much of the real health instruction is given in our high schools. Almost every division of the home economics work has some aspect of health as a major objective. Home economics is elective, however, and is limited to girls. No corresponding curriculum is available for boys, and although worthy home membership is being stressed as an objective of high-school education for boys as well as for girls, and al-



though the attainment of this objective would involve desirable and necessary hygienic principles, little has yet been done towards organizing the materials for courses through which this objective might be reached.

*Correlation needed.* Some of the high-school courses which have not been here reviewed contain possibilities of giving instruction and training in health education. But all of this work is unorganized and undirected. There is need for supervision and coördination of the diverse topics of instruction that are found in the various school courses. One suggestion is to appoint a director of health education, who can formulate a program and who can locate a large number of the items of his program in the several school studies. If this were done, it would not be a matter of chance as to whether or not the teacher of general science includes or omits to give instruction upon water supply and the method by which contagion is spread, or whether the teacher of community civics assigns the topic upon pure-food laws, or the teacher of biology lays a background for instruction in sex hygiene.

**A hygienic school environment.** It goes without saying that the school environment should be hygienic in every respect. The condition of many buildings, however, renders it difficult always to approach the ideal. Many custodians of buildings are careless and even ignorant. Rooms, halls, windows and basements that are kept clean, fresh air supplied in plentiful quantities, heating, lighting, and ventilation regulated according to standard conditions, air free from dust, and seating assignments made with reference to hygienic principles, all contribute to a healthful school environment. Drinking fountains, the disposal of wraps, the school lunch, and similar matters cannot be neglected. Not only will the health of pupils be conserved by hygienic school conditions, but valuable habits and knowledge will be

gained, particularly if pupils are allowed to learn the reasons for the various regulations and are encouraged to participate in carrying them out.

Exigencies of administration and lack of scientifically derived knowledge make it a difficult problem to plan the school day in accordance with hygienic principles. There is, moreover, considerable neglect in this matter. The average adult audience is usually ready at the end of forty or fifty minutes for a lecturer to close his remarks, and it is too much to expect secondary pupils, particularly those of the junior high school, to maintain concentrated attention for three or more hours of class work with no opportunity for relief other than short intermissions between classes. An individual child's program should be arranged, so far as possible, to provide change. Academic subjects can be broken by physical education, laboratory, and practical arts periods. Setting-up exercises are often scheduled. Even though inconvenient from the standpoint of order and discipline, we are beginning to regard the recess as a necessity.

*Mental hygiene.* Hygiene is concerned not only with physical development, but with healthful and efficient mental work on the part of all. Hygiene demands that instruction be fitted to the child's stage of development, to the condition of his health, and to his mental ability. It demands that care be taken to develop proper habits of attention, association of ideas, and emotional response. Here mental tests are valuable, and they might be even more valuable if they could be supplemented by examinations to discover children of neurotic predisposition. The present tendency to group students and to give them work according to ability, thus overcoming habits of laziness on the part of the bright and attitudes of discouragement on the part of the dull, has the fullest endorsement of the mental hygienist. There are, moreover, contributions of considerable

importance upon the hygiene of each of the several subjects, and instruction would benefit if these principles were applied.

Until comparatively recently, mental hygiene has received less attention than other aspects of health and as a result it is probably less understood by those who are engaged in school administration. It means essentially a normal functioning of the mental life, freedom from repression and morbid introspection, normal emotional life, a disposition to face reality rather than to resort to indecision and day-dreaming, and in general a unification of the personality. The number of neurotic persons depends upon the standard set up for normality, but it has been estimated that "at least five per cent of our school children are neurotics in the sense that they are more than ordinarily predisposed to the development of mental complexes unfavorable to the healthy and coördinated functioning of intellect, emotions, and will."<sup>11</sup>

*Importance of early adolescence for mental hygiene.* Investigators are more and more in agreement that early childhood is the important period of predisposition and that it is therefore the period when preventive measures should be applied. During adolescence, however, certain of these tendencies come to light as definite neuroses. For instance, chorea, which is associated with overwork, shock, etc., seldom appears before eight and not often later than fourteen; hysteria, which is essentially an enfeeblement of the synthesizing, organizing, and directive powers, often develops at from fifteen to eighteen years of age; dementia præcox, shown in lack of interest, day-dreaming, and a severance of emotion from other forms of activity, is usually regarded as a typical adolescent disorder. As Slaughter says: "Adolescence, with its abundance of new and strong

<sup>11</sup> Terman, L. M. *Hygiene of the School Child* (1914), chap. 16.

emotions not yet supplied with regular channels of discharge, with its receptivity and corresponding sensitiveness to suggestion, with mental materials weakly organized and therefore liable to dissociation, supplies a prolific soil for the growth of subconscious systems whose future exercise may be useful or harmful.”<sup>12</sup>

Many of these neuroses are functional in character, and may be cured through the right kind of environment. Obviously, preventive measures are to be preferred, but in any case for a large number of students the junior-high-school period will offer the last opportunity for the detection and cure through environmental means of certain nervous disorders. School work itself should give more opportunity for concrete application, and less opportunity for dreaming, for the controlling principle in preventive and curative measures is that health and growth are paramount over all other considerations. An abundance of varied but wholesome food, plenty of fresh air, the proper amount of sleep, and above all a healthy day's work, are the chief elements in this environment.

**The program of health education.** The Committee on Physical Education in Secondary Schools make the following recommendations for a program of health activities:<sup>13</sup>

*Instruction in health problems.* The pupils should be given instruction in: (a) The practical elementary problems which concern their health; as, for example, diet, care of the teeth, sex, sleep, exercise, and bathing in school and at home. (b) The general conditions related to health, as room temperature, ventilation, dust, school seating, and posture. (c) The public-health problems, like sewage disposal, milk and water supplies, and general control of infectious diseases.

Every pupil in high school should be acquainted with elementary health problems in his environment. Direct application should be

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<sup>12</sup> Slaughter, J. W. *The Adolescent* (1911), p. 66.

<sup>13</sup> *Bur. of Educ. Bull.* (1917), no. 50, pp. 12, 14, 18.

made to home, school, and community conditions. Definite reports of health conditions which test the powers of observation should be required. The examinations should test both the knowledge and the health habits of the pupils in home and school.

*Time allotment (minimum requirements).* Two double periods per week should be considered a minimum for this work.

ARRANGEMENT OF TIME	MINUTES
1. Hygiene instruction once per week <sup>1</sup> .....	15
2. Passing to locker room and undressing <sup>2</sup> .....	15
3. Exercises and games.....	45
4. Shower, dressing, and passing to classroom <sup>2</sup> .....	15

<sup>1</sup> This time should be used on other days for swimming or games.

<sup>2</sup> In some cases it will be possible to reduce the amount of time for "passing to locker room and undressing" and increase the allowance for "shower, dressing, and passing to classroom."

These exercise periods of 90 minutes twice per week should be supplemented by play periods after school of at least one hour, and, of course, by regular recess periods and setting-up exercises between class periods.

Where regular class periods are 60 minutes, as they are in some schools, the gymnasium period might be compressed under necessity to 60 minutes. This would be a real disadvantage, as it would lessen the organic and recreative types of exercise.

*School credit.* The courses in hygiene should receive credit on the same basis as other classroom subjects. The physical practice in gymnastics, athletics, games, and swimming should receive positive credit on the same basis as laboratory courses. The hygiene instruction should be graded on the basis of classroom recitations and examinations. The physical practice should be marked on the basis of the quality of the work and on the effort of the pupils in daily practice. Tests of minimum physical proficiency should be given at regular intervals.

## TOPICS FOR DISCUSSION AND INVESTIGATION

1. How are your community and State furthering health education?
2. Examine the programs of study of high schools of your acquaintance, noting the provisions made for physical training and instruction in hygiene. Note also topics in the various courses which pertain to health. Comment upon the adequacy or inadequacy of the program. Does training suffer through lack of coördination?

3. What are the standard regulations for schoolroom lighting, heating, seating arrangement, care of blackboards, etc.?
4. Should the secondary school give credit toward graduation for physical education? Should the colleges accept one or more units in physical education?
5. How shall instruction in sex hygiene be provided?
6. Discuss games, play, and æsthetic dancing as means of expression.
7. What is the status of military training in the secondary schools of the country? Does it contribute to health education?
8. Give the main points of each of the theories of play. Of what value is a theory of play?

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## CHAPTER XX

### TRAINING FOR INDUSTRY, AGRICULTURE, AND COMMERCE

**Changes in industry affecting secondary education.** Prior to the middle of the eighteenth century, very few mechanical inventions had been produced, and people were still using for the most part appliances which had been discovered centuries before. Shortly after the middle of the century, important inventions were made in England which completely revolutionized methods of industry. Hargreaves's spinning jenny, produced in 1767, and Arkwright's inventions the following year, were applied to the textile industries. In 1769, Watt perfected his work on the steam engine, which was soon widely used. From that time on, machinery was rapidly substituted for hand tools in all lines of industry, and the domestic system of home work and home manufacture gave way to the factory system. The application to industry, to transportation, and to communication of newer processes and of motive power is called the "Industrial Revolution."

A series of industrial and political events from about 1808 until about 1840 led the people in the United States to develop manufacturing by factory methods, in addition to the occupations of agriculture and commerce. Unlike the situation in England, the transformation in this country was gradual rather than revolutionary, since apprenticeship and home manufacture had never been so widespread. The full effects of the transformation from a low form of industry to a higher were not strongly felt until the second decade after the Civil War. Since that time the development of industry has been very rapid.

*Important changes in training of prospective workers.* One by one the old trades have been reduced to machine processes, until only a comparatively few remain. In a corresponding degree, opportunities for industrial training through apprenticeship have decreased. A factory-made staple, which formerly might have been the work of a single craftsman, may now involve scores of single operations with specialized workers for each operation. These specialized operations are learned in a short time, and in the majority of cases, by "pick-up" methods. Many industrial concerns are thus able to operate with a large number of unskilled workmen. Therefore individuals lose the opportunity for trade training because their work does not demand it, for it is unprofitable for the employer to give more training to the employee than will suffice to make him most rapidly into a productive unit. The mobility of the labor population also mitigates against trade training, for, since there is no guarantee that the learner will remain in his service, the employer finds it inadvisable to provide industrial training. Thus, a result of the industrial revolution has been the curtailment, or the absence, of opportunity to receive trade training. The education and general mental development of the worker are further hampered by the fact that routine processes involving little or no thinking are substituted for work which called for adaptability and judgment.

*Choice of vocation difficult.* The development of mechanical processes and continued division of labor have been responsible for a bewildering number of possible callings. An analogous development has taken place in the professions and in agriculture. Decision is made more difficult by these subdivisions in industry and in the professions, and also by the fact that it is next to impossible for the youth to come into contact with the various lines of work, as he could formerly. Huge establishments, with their diverse lines of

work and their hundreds or thousands of workmen, reduce the youth who is trying to find his place to the state of mind experienced by the traveler who could not see the forest because of the trees. Nor is his task made easier by the fact that many of the jobs, and particularly those open to young persons fourteen to sixteen or eighteen years of age, are of the blind-alley type. In addition, the necessity for decision is more pressing than ever before, since the percentage of persons finding employment in industry is larger than it has ever been and is constantly increasing, and since the day is past when a young man can migrate westward and homestead a farm.

*Industrial intelligence needed.* In addition to the ability to find his place in the industrial world, the worker of to-day needs to gain reasonably comprehensive ideas of fundamental economic laws, the meaning of industrial organization, and the relationship between employer and employee. The same statement may be made with at least equal force concerning those whose work is along managerial lines. Ignorance of another's point of view and lack of sympathy with it have been responsible for misunderstandings between employers and employees and for the lines of social demarcation which tend to manifest themselves in accordance with the occupation, trade, or profession followed.

*The problem of the school.* It becomes the duty of the school to provide such educational opportunities as are necessary to enable the individual to maintain economic independence. Information and guidance, so that intelligent choice of a life work can be made, are the first step in the program of industrial training. As stated above, there is a great need for industrial intelligence on the part of each citizen, which will enable him to have a fair understanding of the meaning of industry, the position and point of view of

the employer and the employee, and the relation of both of these to the general public.

Vocations for which training is necessary. From the national standpoint, the vocations for which training must be provided are those in which the citizens of the Nation are engaged, the broad lines of which are shown in Table 57.

TABLE 57. TOTAL PERSONS TEN YEARS OF AGE AND OVER ENGAGED IN GAINFUL OCCUPATIONS <sup>1</sup>

	BOTH SEXES		MALE		FEMALE	
	Number	Per cent	Number	Per cent	Number	Per cent
All occupations	41,614,248	100	33,064,737	100	8,549,511	100
Agriculture, forestry, and animal husbandry . . . .	10,953,158	26.3	9,869,030	29.8	1,084,128	12.7
Extraction of minerals . . .	1,090,223	2.6	1,087,359	3.3	2,864	.1*
Manufacturing and mechanical industries . . . . .	12,818,524	30.8	10,888,183	32.9	1,930,341	22.6
Transportation	3,063,582	7.4	2,850,528	8.6	213,054	2.5
Trade . . . . .	4,242,979	10.2	3,575,187	10.8	667,792	7.8
Public service (not elsewhere classified) . . . . .	770,460	1.9	748,666	2.3	21,794	0.3
Professional service . . . . .	2,143,889	5.2	1,127,391	3.4	1,016,498	11.0
Domestic and personal service . . . . .	3,404,892	8.2	1,217,968	3.7	2,186,924	25.6
Clerical occupations . . . . .	3,126,541	7.5	1,700,425	5.1	1,426,116	16.7

\* Less than .1 per cent.

There are, however, hundreds of subdivisions for each of these general headings.

<sup>1</sup> *Fourteenth Census* (1920), vol. 4, p. 34.

**Factors conditioning vocational curricula in a given school.** The factors which first confront the practical administrator in providing vocational training are funds for school purposes, buildings and other physical equipment available, and the number of students desiring training. A district with much wealth and with sizable groups of pupils interested in the major vocations is justified in a more elaborate program than one lacking in these respects. The large community will in all probability be one in which several industries are represented, a factor of no small importance. The small school will have to content itself with fewer lines of industrial training.

*Adaptation to local environment.* In Chapter XIII it was pointed out that "adaptation to local environment" has become almost a pedagogical axiom. It was also remarked that adaptation should mean modification of instruction so that the background of pupils may be utilized, and that it should mean that the cultural tone of the community should be influenced by the school. In connection with vocational education, adaptation to local conditions usually means that the vocational curricula should coincide with the important occupations of the community. There are, however, a number of conditioning factors which must be taken into account if wise selections are to be made. Among these are the size of the student population, the permanence of residence in a community, and the similarity of occupations between community and community.

(1) The field of the secondary school is that of the skilled trades. Professional and semi-professional training will be given in schools of a higher grade than the secondary school; training for the semi-skilled trades can best be cared for by other agencies. Except in the largest cities, it will be impossible to arrange classes for all pupils desirous of mastering specific trade skills; even in the cities many of such



classes are likely to be small, on account of the great number of occupations.

(2) Since 1850 a little less than eighty per cent of native Americans have remained in the States of their birth. Each year the percentage has been almost the same. In nearly half of the States lying west of the Mississippi River, fifty per cent or more of the inhabitants were in 1920 living in an adopted State. Pennsylvania, New York, Maine, Wisconsin, and the "Old South" show the greatest stability of population; the Far Western States show the least. More than half of those migrating from one State to another go to an adjoining State.<sup>2</sup>

The fact that some eighty per cent of the native-born population reside in the State of their birth indicates great stability of population. However, this figure takes no account of movement from one part of a State to another, nor does it take account of the movement from country to city, and *vice versa*. Such migration might easily mean a change as great, if not greater, than that encountered through moving to another State.

On the assumption that the school should train for participation in community life, and often on the further assumption that it should influence its pupils to remain in their native communities, the rural high school has been severely censured. Its curriculum has been excessively academic, and general observation goes to show that graduates of rural high schools forsake the farm. Adequate statistical data are lacking to show the true condition, but an investigation of the occupational distribution of graduates of one small rural high school<sup>3</sup> over a space of thirty years gave results in agreement with general opinion. Fewer than half the graduates remained in the home com-

<sup>2</sup> *Fourteenth Census* (1920), vol. 2, p. 605.

<sup>3</sup> Dolch, E. W. *School Review* (1925), 33:413-21.

munity; the remainder went for the most part to large cities. About a third of the boys became farmers. Granting that this is typical of rural high schools in general, it is questionable where the reason for the condition should be lodged. Social and economic conditions, rather than the high-school program of studies, may be the deciding factors.

We know in general that there is great mobility of labor. If school administrators have reason to believe that a large fraction of young people trained in local educational institutions for participation in local industries elect to go elsewhere, they will probably make different plans for vocational education than they would under different conditions. It may be that just such a situation exists. Ayres found,<sup>4</sup> for example, that only about one sixth of the fathers of 22,027 thirteen-year-old boys were living in 1912 in the cities where they were born, and that among the boys a few more than one half were then living in the places of their birth.

(3) In a study of industries and occupations in a number of localities, Ayres also found<sup>5</sup> that some of the ways by which men and women earn their livings are common to all localities, while others engage many workers in some places and few or none in other places.

These facts modify the belief that systems of vocational education should be primarily designed to train young people to enter local industries.

*Selection of vocational curricula.* Again it is well to remark that the city high school will be able to offer a wide range of elective work, so that in general the pro-

<sup>4</sup> Ayres, L. P. *Some Conditions Affecting Problems of Industrial Education in 78 American School Systems.* Russell Sage Foundation, Bulletin E135.

<sup>5</sup> Ayres, L. P. *Constant and Variable Occupations and Their Bearing on Problems of Vocational Education.* Russell Sage Foundation, Bulletin E136.

blem of selection is not acute. It is acute in the small secondary school. There it will often be possible to offer only a general curriculum and one or two lines of industrial work. These should perhaps be agriculture and home economics, not so much because pupils will remain in the industrial life of the community as because some are likely to follow farming there or elsewhere, because sound educational practice starts by improving existing conditions, and because apperceptive background conditions all learning.

**General vs. specific vocational education.** By common consent, specific vocational education has no place in the junior high school. It is still an unsettled question as to the policy to be pursued in the senior high school, and in other schools enrolling young persons under eighteen years of age. More definitely, the question is whether or not definite knowledge and specific habits and skills used in home-making, the business occupations, the mechanical trades, and in agriculture should result from the specialized curricula of the senior high school; or whether we should aim at general principles underlying these occupational divisions, a broad vocational outlook, and a high industrial intelligence.

*Results of guidance program inconclusive.* In the first place, it is not known how or when the average individual reaches his vocational decision. This was pointed out in a preceding chapter, where it was also remarked that probably the only way this problem will be settled is through a study over several years of large numbers of representative cases. The problem of guidance is most complex, and the influence of each of its several factors has not been determined. Definite vocational decision must certainly precede definite vocational training. Until the secondary-school administrator knows with a high degree of surety that his pupils

are capable of deciding upon their life's work, he cannot be confident of the efficacy of training designed to fit them for specific vocations.

*What use do pupils make of their training?* The question of general versus specific vocational training in the secondary school would be more easily answered if it were known how many pupils use, for a considerable length of time, their training in earning a living. Table 58 indicates at first glance that they remain surprisingly well in the lines of work for which they have been trained. An investigation of the subsequent careers of Indiana boys enrolled in vocational and agricultural curricula gave parallel results,<sup>6</sup> while a similar study of the destinations of pupils graduating from homemaking, industrial arts, and commercial curricula in the Washington Junior High school of Rochester, New York,<sup>7</sup> showed that a majority were working in an allied trade, in a trade where hand skills were necessary, or in places where the training received in school was not used.

In interpreting Table 58, it should be remembered that work or further study in line of preparation does not mean necessarily that the individual is making use of specific vocational skills gained in school. Any one of a hundred or more commercial positions, for example, would be "in line of preparation." The general principles of business needed and used in one commercial position would probably be very similar, if not identical, with those needed in another; the specific skills demanded would in many cases be entirely different. Again, the period of time covered is too recent to permit final judgment. It will be noticed that, in Table 58, the percentage of graduates of vocational high schools who are working or studying in line of preparation is

<sup>6</sup> *Indiana Educ. Bull.* no. 61, Vocational Series no. 23 (1922).

<sup>7</sup> *The Junior High Schools of Rochester, New York.* (H. S. Weet, Superintendent of Schools), 1923, pp. 152-60.

smaller for those schools whose records extend back ten or more years.

TABLE 58. PERCENTAGE DISTRIBUTION OF GRADUATES OF THIRTEEN SPECIAL-TYPE HIGH SCHOOLS <sup>8</sup>

SCHOOL	PERIOD INCLUDED	NUMBER OF GRADUATES	WORKING OR STUDYING IN LINE OF PREPARATION	WORKING OR STUDYING IN OTHER LINES	MISCELLANEOUS	INDEFINITE	UNKNOWN
<i>Commercial</i>							
Boston.....	1908-20	1607	57	7	1	20	16
Springfield, Mass.....	1900-20	1440	52	2	2	2	42
Worcester.....	1918-20	448	78	11	8	0	4
Brooklyn.....	1921	142	82	18	0	0	0
Portland, Ore.....	1920	45	82	16	2	0	0
<i>Technical or Mechanical</i>							
Newton, Mass.....	1911-20	1024	92	4	0	0	5
Springfield, Mass.....	1916-18	322	36	30	5	4	25
Boston Mechanical Arts...	1896-14	2223	50	29	0	0	21
Boston Mechanical Arts...	1919-20	173	78	15	0	4	4
Boston Practical Arts.....	1917-20	450	38	47	15	0	0
Minneapolis** .....	1917-20	269	63	33	0	0	4
<i>College Preparatory</i>							
Boston Latin.....	1905-20	1181	84	2	3	0	11
Boston Girls' Latin.....	1910-20	934	67	19	9	3	1
Newton, Mass.....	1916-17*	438	78	9	5	7	1

\* Includes 1920.

\*\* Girls' Vocational School.

<sup>8</sup> Holl, R. C. *The Results of Vocational Education in Secondary Schools*. Unpublished doctorate thesis, 1921. Harvard Graduate School of Education.

According to the Bureau of Education Reports (Bulletin no. 40, 1925, p. 3), there are 19 public high schools of the distinctively business and commercial type, and 139 of the vocational and technical type.

There is, on the other hand, some information to show that graduates from more highly specialized curricula do not follow the vocations for which they were trained. This is true for at least some trade-school students,<sup>9</sup> of whom we should expect otherwise. It is well known that many graduates of law schools do not practice law, and that many graduate engineers do not follow engineering. Colleges of agriculture have been notorious for their failure to turn out farmers. Added to this are the testimonials of many directors of continuation classes to the effect that for only a small percentage of their pupils is there a specific vocational value for the industrial courses they study.

*Training needed for success in industry.* The proposition that vocational skill is necessary to a successful industrial life is self-evident. There are, however, other types of training which are essential. These, for the most part, may be called training in "character traits." Data are available to indicate the importance of character traits among the rank and file of industrial workers, and among the membership of such a highly technical occupation as engineering.

(1) The importance of character traits to the success of the average industrial worker is brought out when reasons are sought for the separation of an individual from his job, whether separation comes through resignation or discharge. In periods of industrial depression discharges are much more frequent, while during periods of marked industrial activity the number of resignations increases. The ratio of resignations to discharges varies with the type of work, with the firm, and with the locality. During 1915 discharges were responsible for 28 per cent of the labor turnover; during the War for 13 per cent. These figures were arrived at from computation based upon scores of industries employing tens

<sup>9</sup> See *Sch. and Soc.* (1918), 7:132-34; *Sch. Rev.* (1925), 33:594-600.



of thousands of workers.<sup>10</sup> They indicate fewer separations because firms were more dissatisfied with their workers than one would expect.

The most important point for the general question under discussion is, however, the reasons for separation. Causes of discharge are relatively easy to determine. They are few in number, and are confined generally to incompetence, unreliability, carelessness, laziness, insubordination, misconduct, "trouble breeding," and personal habits. Reasons for voluntary resignations are determined with much more difficulty. Employees are not given to careful analysis of their motives and are likely to give offhand answers which do not tell the story; again, they do not tell the management just what they think of the firm for fear that some day they might have to ask for another position. In general, employees quit because of dissatisfaction with the working place, as a result of an accumulated series of grievances frequently not reducible to some one definite point.<sup>11</sup>

A series of occupational investigations was made in Detroit,<sup>12</sup> the purpose of which was to secure information about different kinds of work, the main advantages and disadvantages, the qualifications and training, the possibilities and requirements, the remuneration, etc. The data were compiled for use in the vocational guidance and vocational education programs of the city schools. The common deficiencies of workers, as judged by their employers, are very similar to the reasons for discharge shown in the preceding paragraph. Lack of training is, of course, an important reason for failure to make good on the job, and this deficiency seems to influence some positions more than others.

<sup>10</sup> *The Turnover of Labor*. Bull. no. 46, Employment Management Series no. 6 (1919), Federal Board for Vocational Education, p. 19.

<sup>11</sup> *Ibid.*, p. 23.

<sup>12</sup> Edgerton, A. H., and Cunliffe, R. B. *Twenty-Third Yearbook* (1924), part 2, pp. 126-27.

Even in those occupations where skill is needed, however, other factors seem to be at least as important, if not more important.

(2) The importance which engineers place upon the less tangible side of their training is shown by more than 7000 replies to a circular letter addressed to the members of four large engineering societies.<sup>13</sup> They show that professional engineers regard personal qualities as much more important than knowledge of engineering science and the technique of practice in determining success or failure in engineering. Asked to number in order of importance groups of qualities headed respectively "character," "judgment," "efficiency," "understanding of men," "knowledge," and "technique," the votes placed the character group at the head of the list by the decisive majority of 94.5 per cent, while technique was placed at the bottom by an equally decisive majority. The first four groups of qualities were judged to constitute three fourths of the engineer's equipment; knowledge and technique, one fourth.

*Shop conditions only partially reproduced in school.* By common consent the principle of learning by doing must dominate specific vocational training, if that training is to be productive of worth-while results. This means that the school would have to provide shop conditions for its industrial classes. To date the cost has been almost prohibitive. Machinery is expensive and depreciates rapidly; new inventions soon render machines out of date, so that serviceable apparatus has to be discarded. The secondary school has not been, and it is doubtful if it soon will be, able to duplicate shop conditions for its vocational students.

Even though expense were not a factor, a wide difference would still separate the school shop and the shop of the industrial concern. The atmosphere of make-believe will al-

<sup>13</sup> Mann, C. R. *Educ. Rev.* (1917), 53:11-29.

ways surround the one, to some extent, at least, as contrasted with the atmosphere of reality surrounding the other. The school shop will be something of an imitator; its purpose is to supply instruction rather than to produce goods. It will have an atmosphere of its own, not that of the industrial concern.

Shorthand, typewriting, and Smith-Hughes agriculture come more nearly being exceptions to the above statement than perhaps any other vocational courses offered in the secondary school. Shorthand requires no apparatus, and the expense connected with typewriting has not proved prohibitive. Both subjects can be learned in essentially the same way that they will be used later. General school conditions are, however, rarely the same as those prevailing in business offices, so that the young worker almost invariably must undergo a period of adjustment. Smith-Hughes agriculture most nearly duplicates actual conditions. The project involves, not imaginary, but actual production of grain, fruit, or live stock. Necessary land or machinery must be provided, contracts made, expense accounts kept, work done, products marketed, and profit or loss shown. The function of the teacher is to show the best methods of carrying out each of these steps, and to supervise the work.

*Conclusion.* The facts presented in the foregoing discussion strongly support the conclusion that the secondary school should stress general vocational education, habits of industry, reliability and morale rather than the development of specific trade skills. This, of course, does not mean that all vocational skill is taboo; it means rather that skill is not the primary aim of vocational education in the secondary school. The pupil should be kept learning; he should develop the right attitudes and ideals toward industry.

The specific types of industrial education supplied by the secondary school will next be considered.

**The agriculture curriculum.** Education that prepares for successful farm life must consider three major problems: the production of farm products; their disposal or marketing; and the community life of rural localities.

*Production.* As long as there was an abundance of land that might be had for the asking, science was not extensively applied to problems of production in agriculture. When land reserves were exhausted, and when continuous cropping began to drain the soil of its fertility, the need for scientific agriculture rose. Science is being applied to practically every phase of the industry; so that it now demands a high degree of technical information.

A number of developments have occurred in agriculture which cannot be neglected in planning a program of vocational agriculture. While the general farmer is still more numerous than any other type, specialization is nevertheless creeping in. Wheat raising, truck farming, dairying, and fruit growing are examples. Fruit growing breaks up into a dozen or more specialties, as illustrated by apple growing in Colorado or Washington, the production of prunes in Oregon, or raisins or citrus fruits in California. Again, improved machinery has increased to a remarkable degree the amount of work one person may do, and this and other factors have tended to increase the size of the average farm. On the other hand, intensive cultivation of small tracts has been stimulated by the demands of the cities. Higher land values also operate to produce intensive farming.

*Marketing.* One of the greatest problems confronting the farmer to-day is the disposal of his products. Many believe this problem surpasses in importance even that of production. There has really been no shortage of farm products, but the farmer has not always received a fair price for what he has had to sell. Unlike manufacturers or tradesmen, he has not formed associations for the disposal of his wares, but has for

the most part remained independent in his dealings. As a consequence others have reaped more profits from agricultural products than has the farmer.

Attempts have been made from time to time to originate effective methods of marketing. Most of these have been barren of results. Fruit-growers' associations have, however, achieved considerable success in coöperative marketing. They pool their crops, erect warehouses, and arrange for distribution throughout the entire year. Great care is given to sorting, grading, and packing. By making their wares attractive and by effective advertising they are successful in increasing the demand for their commodities. While the method of marketing farm products has probably not yet been worked out, it is likely that the fruit growers have valuable suggestions for others. In any case, the problem is one that should receive emphasis in the agriculture curriculum.

Another financial problem involved in agriculture should be duly recognized. Briefly put, it concerns applying to the industry the practices of successful business. Even a moderate-sized farm with equipment represents an investment of several thousand dollars; a large farm, of course, represents a much larger capital outlay. It is the exceptional farmer who computes the cost of producing a bushel of wheat, takes into account the interest on his investment, or allows for depreciation of buildings or machinery. Farm accounts should form an important part of the curriculum of prospective farmers.

*The rural community.* Too little attention has been given to rural community life and to the rural home. It is well known that the population residing on the farms has increased slowly, while that of the cities has increased to an amazing degree. According to the last census, some rural areas have experienced either no material increase in popula-



tion or an actual loss. There has been a constant influx into the cities from rural communities; the younger generation especially has turned its eyes cityward. All this is due in part at least to the superior social advantages offered in the city. The rural home is isolated, it is too often unattractive in appearance and inconveniently arranged. Even with the telephone and automobile there is little social life, and that which exists is unattractive when placed in competition with the social life offered by the towns and cities.

How the rural social problem is to be met is not clear. Much could be done, however, towards beautifying the country home and making it a better place to live. One thing is certain: as long as farm community life is compared with city conditions to the advantage of the latter, so long will young people be ambitious to leave the farm. Educators must remember that "agriculture is more than a vocation; it is a mode of life."

*Agriculture courses.* The chief courses in the agriculture curriculum are farm crops; animal husbandry, including poultry raising and dairying; soils; horticulture, which subdivides into vegetable gardening and fruit growing; farm engineering; and farm management.<sup>14</sup> To these should be added rural sociology and economics. All these subjects must of course be adapted to local conditions. Seasonal factors also exert considerable influence in planning instruction — for example, preparation of a seed bed for corn and planting should be studied in the spring; seed selection, harvesting, and storage in the fall.

Project teaching has made great improvement since 1918 in agricultural instruction, and it will undoubtedly be improved further. As remarked in another paragraph, agriculture is one of the few fields of industrial education where secondary instruction may be made to approximate, if not to equal, actual working conditions.

<sup>14</sup> See *Bur. of Educ. Bull.* (1920), no. 35, pp. 9-22.



**The commercial curriculum.** Pupils enrolled in the commercial curriculum constitute about a sixth of the total secondary school enrollment. From the standpoint of numbers it is the most important vocational division in the secondary school. This fact is sufficient to warrant an extremely close analysis of the aims of commercial curriculum and a corresponding examination of courses.

*Junior business training.* The educational and psychological principles back of general science, general mathematics, etc., have been applied by Nichols and others to the commercial field.<sup>15</sup> The result is a course entitled "junior business training," whose purpose is, first, to give skill and understanding of those business principles which every one should know if he is properly to conduct his personal affairs. Included here are such items in the conduct of a home as how to make necessary records, file valuable papers, and effect wise economies in general. It also aims to enable "those who study it to deal more satisfactorily with business men and to take full advantage of such important services as are rendered by the railroad, telephone, telegraph, banking, express and insurance companies; the parcel post and other Post Office facilities." The second aim is to inculcate necessary manipulative power and knowledge of business practices in positions open to junior employees. Instruction not only shows how to perform the duties of these positions; it shows their relation to more advanced positions. In no sense is the course regarded as a full business education. Rather, it is to be looked upon as a junior vocational business training to be followed by more complete business preparation in higher schools. The guidance function is also served, because

it is only through a performance of the different junior office tasks that the child actually gains an exploratory experience which will

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<sup>15</sup> Nichols, F. G. *Junior Business Training* (1923), pp. iii-v, 1-4. Quoted with permission of the author.

reveal to him what commercial workers really do. Through the instruction provided in this course he should become familiar with the educational requirements for commercial occupations and the lines of promotion which are open to commercial employees. He should be guided thereby to an occupational choice under circumstances which will make clear to him what is required in the way of preparation for the vocation which he chooses.

The likeness between the content of the course in junior business training and the new content recommended for mathematics courses will be evident. Similarly, it includes certain elements in training for worthy home membership. If junior business training is made a separate course, it should afford considerable relief to mathematics courses. Such relief might allow a reduction of the number of periods assigned to mathematics.

*Senior-high-school courses.* Scrutiny of Table 59 (Chapter XXI) will show that the backbone of the present commercial curriculum really is bookkeeping, shorthand, typewriting, and arithmetic. The commonly made assertion that commercial subjects are clerical and not commercial or business studies is apparently justified. The four subjects just enumerated are more adapted to training suitable for stenographers and clerks; even for these groups they probably over-emphasize arithmetic and bookkeeping. Stenographers and clerks constitute only a fraction of the number who will seek to earn a living in business or commercial pursuits.

The offerings in the typical commercial curriculum should therefore be extended, and the work differentiated according to the major divisions of the field. To the clerical should be added such courses as are needed in secretarial work. This would include economics, business correspondence, and perhaps commercial law. Second, courses in salesmanship are needed. In this line shorthand and typewriting are of little use; on the other hand, knowledge of the principles of sales-

manship and familiarity with the elements of business are needed. Third, courses should be provided which have as their chief aim the teaching of the general elements of business practice. The law of supply and demand, business contracts, the principles of credit, turnover of stock, advertising, and the relation of employees to employers are examples of topics suitable in this connection.

Aside from salesmanship, the positions filled by boys are quite dissimilar to those filled by girls. Girls go in great numbers to stenographic and clerical positions; places filled by young men, however, demand a broader commercial education. Certainly many of them never need shorthand or typewriting. In some cases boys and girls can be taught in the same classes; in other cases the work will require segregated classes.

*Curriculum recommended by the sub-committee of the Commission on the Reorganization of Secondary Education.* Below is shown the commercial curriculum recommended by the sub-committee on business education of the Commission on the Reorganization of Secondary Education.<sup>16</sup> It is assumed that commercial pupils will benefit from the provisions found in the school for physical education, chorus work, extra-curricular activities, and the like.

JUNIOR HIGH SCHOOL		Ninth grade	
<i>Seventh grade</i>		English . . . . .	5
No special commercial work		Community civics . . . . .	2½
		General science . . . . .	5
<i>Eighth grade</i>		Commercial mathematics . . .	2½
English (half time devoted to		Elementary bookkeeping,	
practical English with em-		business forms and business	
phasis on letter forms) . . .	5	writing . . . . .	10*
U.S. History . . . . .	5	Typewriting . . . . .	5*
Household or industrial arts	4*		
Business arithmetic . . . . .	5*		
Elementary, industrial, and			
commercial geography . . .	3		
First lessons in business . . .	5		
		SENIOR HIGH SCHOOL	
		<i>Tenth grade</i>	
		English . . . . .	5
		Bookkeeping, intermediate . .	5

<sup>16</sup> *Bur. of Educ. Bull.* (1919), no. 55, pp. 15-18.

Industrial and commercial geography.....	5	Typewriting (transcripts)....	2
<i>Electives</i> (choose 1)		Office practice. ....	3
Shorthand and typewriting..	5	<i>Electives</i> (choose 1)	
Science.....	5	Economic history since 1700.	5
History (to beginning of 18th century).....	5	Home economics.....	5
Modern language.....	5	Science with industrial application.....	5
<i>General Business and Bookkeeping Curriculum</i>		<i>Twelfth grade</i>	
<i>Eleventh grade</i>		Business English.....	5
English.....	5	Advanced American history and citizenship.....	5
Office practice.....	3	Commercial law.....	2½
Bookkeeping, advanced.....	5	Economics.....	2½
<i>Electives</i> (choose at least 2)		Secretarial practice, including shorthand.....	5
Economic history since 1700.	5	Transcription and typewriting.....	4
Science with industrial application.....	5	<i>Retail Selling and Store Service Curriculum</i>	
Modern language.....	5	<i>Eleventh grade</i>	
<i>Twelfth grade</i>		English.....	5
Business English.....	5	Salesmanship and merchandise.....	5
Advanced American history and citizenship.....	5	<i>Electives</i> (choose 2)	
Commercial law.....	2½	Economic history since 1900.	5
Economics.....	2½	Science, with industrial application.....	5
Advanced commercial arithmetic.....	2	Home economics.....	5
Business organization, advertising and salesmanship (or foreign language if begun earlier).....	5	<i>Twelfth grade</i>	
<i>Stenographic and Secretarial Curriculum</i>		Business English.....	5
<i>Eleventh grade</i>		Advanced American history and citizenship.....	5
English.....	5	Salesmanship and retail store organization.....	5
Shorthand.....	5	Store practice and store mathematics.....	5

\* Unprepared periods.

Additional electives which are available in the school and for which the pupils have special aptitude should be open to them. It is especially recommended that wherever well-organized courses in commercial or applied art are offered, such courses be commended to commercial students who may have aptitude for them.

It is strongly urged that opportunity be found for part-time work

during the twelfth year of the stenographic and pre-secretarial curriculum. For pupils who spend alternate weeks, or fortnights, in positions the total time available in school will of necessity be only one half that given. For such pupils the distribution of their work while in school may well be as indicated for the twelfth year.

It is essential that pupils following the retail selling and store service curriculum have store experience. This is possible on a part-time arrangement, but additional opportunities will be found to get such experience from work on Saturdays, evenings, on holidays, and during the summer vacations.

The scope of the above curriculum is unquestionably much broader than that of the typical commercial curriculum. Moreover, differentiation is provided for various commercial positions. The whole plan is, however, subject to serious objections:

(1) Segregation of commercial pupils is begun entirely too early. If industrial, home economics, and agricultural curriculum-makers were of the same mind as the committee on business education, and if administrators followed their recommendations, we should have specialization beginning at the eighth grade. Specialized curricula are to be avoided in the junior high school because they make impossible the program of diagnosis and guidance, and because the time pupils should devote to general education is consumed in studying special subjects. The course in junior business training could well be substituted for the commercial courses recommended for the eighth grade and possibly for those recommended in the ninth.

(2) If typewriting is to be required in the ninth grade, it should be clearly demonstrated that all pupils will use it later. It is extremely doubtful if this is the case. Until proof is forthcoming, typewriting should be an elective.

(3) Three years of bookkeeping seems a disproportionately large requirement for those desiring a "general business" training; one half year of economics seems entirely too little for this group.

**Education for the manufacturing and mechanical occupations.** Manufacturing and the mechanical industries employ 30.8 per cent of the total number of persons in this country engaged in gainful occupations. In addition, 10 per cent are employed in the transportation service or in mining occupations. These 17,000,000 workers live for the most part in urban communities. How to provide the type of education best fitted to make them efficient and contented members of the industrial army, and how to organize and administer education so as to make it yield the highest social returns, constitutes one of the outstanding problems of the times. It is a short-sighted policy which is based only upon present needs, and which insists that the schools train workers in the specific skills demanded by the present industrial organization. Skills are needed, but they alone do not insure efficiency. It is not the absence of skill that gives rise to the difficulties between employers and employees, it is failure to appreciate each other's point of view, or to agree upon what is just. The whole problem of vocational education is intimately connected with community life.

*Junior-high-school courses.* The same educational theory which supports the more academic general courses also supports the first courses in manual arts. It is intended that the boys shall gain that knowledge of tools, materials, and elementary shop processes and practices which applies most directly to the affairs of life. It is also intended that the work shall give them some basis for understanding the industrial organization; it should serve as a place for testing abilities and interests. Thus, experience will be gained which will function when it becomes necessary for the boy to decide upon the curriculum to be followed in the senior high school, or when he finally decides upon his vocation.

For years wood work, with an allied course in mechanical drawing, monopolized the manual arts; even yet it is about



the only type of activity for boys found in many (perhaps the majority) of secondary schools. Wood work should be forced to share the time with prevocational courses based upon other occupations important in the community and in the nation at large. The survey offers a means of determining the types of work engaging the inhabitants of a community; the federal census reports indicate the chief occupations of the Nation. Among the latter are metal-working, machinist trades, wood-working trades, building trades (usually not comprehended in the usual courses in wood-working), textile trades, painting trades, and those trades which may be listed under the head of operative engineering. Consequently, industrial arts work in both the junior and the senior high school is being expanded to include metal-work, electrical work, building and construction, applied electricity, automobile mechanics, sheet metal, and printing.

In the large junior high school, special shops are often provided for these different divisions. Boys spend a certain amount of time in each shop. For example, a semester in wood-working is followed by one in the electrical shop, the latter by one in sheet metal, and so on. A common provision is to require the courses in manual and industrial arts through the seventh and eighth grades, and allow elective privileges in the ninth. In the small junior high school it is quite probable that manual arts will be limited in scope. The "general shop" is, however, making its appearance. In a word, it brings the activities of the separate shops into one room and often under the charge of one teacher. The work is organized, not on the basis of wood, metal, or electricity, but as a series of projects of increasing complexity. A project may combine sawing or planing with electrical wiring and elementary metal-work. The educational theory behind the general shop is excellent. It seems to be the most

feasible solution of the manual arts problem in the small school; it may supplant the special shops in the large schools.

*Senior-high-school courses.* Sponsors of the comprehensive senior high school are in favor of providing work in metal, wood, printing, automobile mechanics, and the like alongside the commercial, home economics, college preparatory, and agricultural curricula; as yet, however, a large part of this education is given in special schools. The curricula provided to give industrial or technical education to boys of senior-high-school age are so many and varied as to make a detailed description out of the question. Aside from the continuation school and the trade school, the technical high school comprises the commonest type of educational institution supported by public funds. It usually does not aim directly at trade training; it stresses the general aspects of vocational education, for it expects its graduates to become leaders in industry. It sends many pupils to collegiate institutions.

**"Special" curricula.** In large senior high schools it is likely that groups of pupils will be found who are interested in art, music, or similar subjects. There seems to be no reason why these studies should not be pursued as intensively by those interested in them as are home economics, industrial arts, or commercial curricula. The vocational values of special curricula are comparatively small as judged by the number of people earning their living through music, art, etc. Their importance, however, is not to be judged solely upon this basis, but upon the contribution they make to the general welfare.

Several pupils will be found who desire to study a special subject as a free elective to one who is interested in it as a possible vocation. A canvass of a residential community showed, for example, that approximately half the pupils in

both the junior and the senior high school had studied music at home, usually piano. It was learned, moreover, that fully two thirds of all the homes in this particular locality possessed musical instruments. More junior-high-school pupils applied themselves to music than did senior students, the latter saying that they found it necessary to drop private music because of the demands the school made upon their time.<sup>17</sup>

Music offers an excellent opportunity for school administrators to utilize outside agencies for school purposes. As a matter of fact, the practice of granting credit for work done in music under private instruction has long been found. The school is protected by the standards set for qualifications of music teachers, and by the requirement that pupils show definite progress. Administratively, it seems best for state rather than local authorities to certify the music teachers, and for a committee whose personnel includes disinterested persons to set examinations to test the pupil's progress.

**Vocational values of the "academic" subjects.** Aside from teaching, little value can be ascribed to the academic subjects for vocational purposes. To be sure, they contribute to vocational efficiency, but it is not often that the job itself makes its primary demands upon facility in oral or written expression, ability in mathematics, or knowledge of history.

The same statement can be made with reference to modern foreign languages — the claims of their adherents to the contrary notwithstanding. The Modern Language Association of America and the National Federation of Modern Language Teachers in 1920 resolved,<sup>18</sup> among other things,

<sup>17</sup> Scott, F. A. *Sch. Rev.* (1920), 28:112-22.

<sup>18</sup> *Sch. Rev.* (1920), 28:776-78.

that as a result of the World War the demand for speaking and writing knowledge of modern foreign language has greatly increased. In their opinion, also, knowledge of modern foreign language is needed much more than formerly in diplomatic service and commercial work. Therefore the "average student whose course is to end with the high school should study one foreign language for at least three years, and the average student whose course continues into college should have at least three years of modern foreign language work in high school and at least three years more in college." The temper of this statement is modified by another which asserts that, as a secondary-school discipline, foreign language commends itself by its cumulative processes, requiring as it does consistency of method and continuity of study. In this respect foreign language was held to be equal to any, and superior to most, other subjects of the high-school curriculum.

Unfortunately, resolutions do not change conditions. Statistics are not available to show the number of diplomatic or commercial positions demanding knowledge of modern foreign language; nor do we know how many high-school students use their foreign language after finishing school. It is probable that an extremely small number of high-school graduates ever enter occupations which in any way call for the use of foreign languages — assuming that they gain usable knowledge of the language in the secondary school. Any one acquainted with modern foreign language instruction in secondary schools knows that this is an entirely erroneous assumption. Finally, a canvass to show the occupations entered by graduates from foreign language departments in colleges and universities would undoubtedly reveal the fact that they enter teaching and in only rare instances the diplomatic or commercial service.

**How specific industrial training is to be provided.** There

comes a time when the individual must master the technical knowledge and skills which are a part of his vocation. If the curricula of the senior high school are to stress general principles and the development of ideals and attitudes, provisions must be made for the final acquisition of skill elsewhere. Several possibilities present themselves,<sup>19</sup> of which three will be commented upon briefly.

*All-day vocational schools.* One is a system of industrial schools, supported at public expense, and devoted exclusively to the acquisition of technical knowledge and skill. The location of these schools would take into account both the location of the industry or industries employing the graduates, and the place of abode of those desiring training. A large manufacturing center might thus be the home of several industrial schools; again, a single school might serve a large area, particularly if the population were sparse or if the vocation were highly specialized and employed relatively few workers.

Publicly supported trade schools are organized to a considerable extent along these lines. As yet, however, they reach comparatively few pupils. The policy of making one school serve a wide territorial area has not been extensively adopted. Private institutions, such as the business or the automobile school, have much the same organization.

*Schools for employees.* Many industrial concerns have been active in providing, at their own expense, schools for their employees. These schools vary greatly in organization and in type of instruction. What the future will bring by way of development in this direction cannot be foretold. It is not beside the point, however, to ask whether or not industry should be relieved of all responsibility with respect to vocational training.

*Part-time education.* The third possibility, which many

<sup>19</sup> See *Bur. of Educ. Bull.* (1921), no. 5, pp. 9-12.

regard as offering the greatest promise for the solution of vocational training, consists of the arrangement whereby training may be given, under public supervision, in connection with the industries. The continuation and the part-time coöperative school, which have already been referred to, are regarded as "regular" types of part-time education. In addition to these arrangements, another plan has arisen which occupies a place in the schedules of many high schools. It is used most frequently in connection with salesmanship courses. Pupils attend school the first four days of the week and go to the store on Fridays and Saturdays. They thus receive laboratory work of the most practical sort.

There are, however, other classes of pupils who would benefit from what has been termed "occasional" types of part-time education. Among these are boys living on farms who must leave school early in the spring to help with the work at home. Similarly, many pupils find it advantageous, because of seasonal demands for workers, to obtain employment at some other time than during the weeks immediately following commencement. It has been recommended that arrangements be made so that pupils may begin work before the end of the school year, and that the time between placement and graduation be regarded as a probationary period during which employer and school keep in close touch with the progress of the pupil. When the work is satisfactory, it is urged that the pupil should receive his diploma as though he were in regular school attendance.

Another group comprises those boys and girls who, because of financial stress, can attend school only a part of each day. Heretofore these pupils have usually been excluded, because of the tendency on the part of school officials to insist upon a full day's attendance. There is no good reason for insistence upon this policy; on the contrary, there is good reason for abandoning it. In the first place, the



schools are publicly supported; in the second, a pupil should be benefited from a part of the courses offered. When it can be shown that it is really necessary for a pupil to attend for only a part of the day, the school should welcome that pupil and encourage him to stay, to lengthen his course a year or more as may be necessary, and eventually to complete the work for his diploma.

A complete program of part-time education will not ignore those boys and girls employed after school, on holidays, and during vacations. Such employment should prove profitable in guiding the pupil toward his ultimate vocational choice and in teaching him the knowledge and skills which are a part of a specific occupational pursuit.

**The Smith-Hughes Act.** In order to stimulate training for useful employment, Congress passed in 1917 the Vocational Education Law, commonly known as the Smith-Hughes Act, which authorized the appropriation from the national treasury of the sum of \$3,000,000 annually for aid in paying the salaries of teachers, supervisors, etc., in agriculture, and an equal amount for teachers of industrial education, including home economics. It also provides an expenditure of \$1,000,000 of federal funds for training teachers. For agricultural education, funds are allotted to the States in the proportion which their rural population bears to the rural population of the United States; in home economics and industrial work, in the proportion which the urban population bears to the total urban population of the Nation. For a school to receive federal aid, however, the community or State, or both, must match the federal grant, dollar for dollar.

Only schools under public control can secure Smith-Hughes funds, and they must provide training which will fit young people over fourteen years of age for useful employment. This provision of the law is zealously guarded.

Agricultural schools must provide, for example, directed or supervised practice for at least six months of the year, and the other vocational schools giving instruction to persons who have not entered upon employment must give at least half of the time of instruction to practical work on a useful productive basis.

There are, of course, many young persons of fourteen years of age or over who have already entered upon gainful employment. At least a third of the amount appropriated for salaries of teachers in home economics, industrial, and trade schools must, if expended, be applied to part-time schools or classes for workers fourteen to eighteen years of age. Any subject may be taught, provided it enlarges civic and vocational intelligence. These schools must provide a minimum of 144 hours of classroom instruction per year. Arrangements are also made for evening industrial schools, where instruction is supplemental to daily employment, for persons of sixteen years of age and upwards.

In general the law provides for (a) full-time schools or classes, where half the time is devoted to practical work, roughly a third to related subjects, and the remainder to English, history, civics, and hygiene; and (b) part-time classes, including coöperative and continuation schools or classes, trade, extension, evening, and trade preparatory schools or classes. In coöperative classes, where pupils alternate between school and shop, vocational teachers must be in full charge during the time pupils are working in the shops. In continuation schools, the aim is to extend and supplement general education and enlarge vocational intelligence. Trade extension schools and evening schools are for those already engaged in industry and aim to supplement the daily work and to extend knowledge of the trade in question; trade preparatory schools permit preparation for an industrial pursuit other than the one in which the in-

dividual is employed. The provisions of the law are administered by federal and state officials. The federal office exercises general supervision, and its agents maintain personal contact with state officials.

*How the law affects the school.* The law has done much to improve industrial education. There are, however, certain points in its influence upon secondary education which should be considered: (1) Many feel that the situation would be improved if insistence were not so strong upon trade training and if more general industrial education were permitted. (2) The demand that half the time be given each day to practical work, and the regulations covering practical and related work are a source of great inconvenience in the organization of the high school. (3) Many pupils interested in agriculture, home economics, or industrial arts do not wish to enroll in courses whose controlling aim is preparation for employment. Not many schools can maintain general courses in these subjects in addition to the Smith-Hughes courses, and pupils suffer as a consequence. (4) The work the Smith-Hughes teacher may do is limited. For example, the teacher of agriculture may teach courses in agriculture and related subjects only. His services would be more valuable to the school if his duties were not so circumscribed.

*Proposed revisions.* It will be noticed that home economics shares the fund with industrial arts, and that no specific provision is made for commercial education. An effort has been made to give home economics the same appropriation as that accorded to industrial education or to agriculture, and to give recognition through the appropriation of funds to commercial education. As yet these efforts have been unavailing.

## TOPICS FOR DISCUSSION AND INVESTIGATION

1. Should junior- or senior-high-school classes be asked to make furniture, repairs, etc., for the school?
2. Discuss the following statement: "Our secondary courses in business education have, except for those of a handful of high schools of commerce, failed utterly to give the student an appreciation of the functioning structure of modern society."
3. Describe the purposes and the curriculum of a technical high school. Of a boys' or a girls' trade school.
4. What are the powers of the Federal Board for Vocational Education? What is its general policy?
5. What is the attitude of organized labor toward industrial training in secondary schools?
6. Should the school relieve industry of all responsibility in giving vocational training?
7. Describe the administrative organization for the supervision of Smith-Hughes work in your State. Describe the scope and character of the schools which receive federal aid.
8. Consider boys' and girls' club work as a means of providing prevocational and vocational education. How are clubs organized and conducted?
9. Make a somewhat intensive study of the commercial offerings in the secondary schools of your State. Contrast the offerings of the small schools with those of the large schools.
10. Is there a real need for such specialized subjects as commercial English or industrial history?
11. Critically examine the following statement: "To sum up the full value of the teaching of printing, besides strengthening the pupil in his grammar, spelling, punctuation and general knowledge, it increases the appreciation of art and of good printing; it makes more and better buyers of high-class printing; it makes more intelligent advertisers, and hence better business men and better citizens."

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## CHAPTER XXI

### THE PROGRAM OF STUDIES

**The problem of the chapter.** Practically all of the principles considered in previous chapters find their true meaning and application in planning the activities which occupy, from day to day, week to week, and year to year the time and energies of pupils. The chief purpose of this chapter is to show how the secondary school organizes its program of studies so as to take account of those principles. What work shall be required of all pupils, how we are to locate subject-matter in the curriculum, what differentiation should be made in recognition of different needs and interests, and what steps must be taken to insure that the pupil integrates his learning, are major problems of the discussion. Representative programs of study are presented, and data to show how the energies of pupils have been directed in the past. The chapter closes with a contrast of two current theories for organizing the work of the secondary school.

**The core curriculum.** One of the first problems confronting the administrator is to decide upon the topics, activities, or subjects which will be required of all pupils. There was a time when this question was regarded as comparatively simple, because the various subjects were thought of more as agencies of mental discipline than as means of affording specific training. The present theory of transfer of training, however, prohibits the requirement of any subject because of its superiority in this respect. Moreover, the psychology of individual differences shows the fallacy of the notion that all pupils should be treated alike. The principle of common values remains as a basis of requirements. That knowledge



and those skills, habits, ideals and attitudes which should be the common possession of all will, in accordance with this principle, be organized into required courses. These may be termed "constants."<sup>1</sup> Previous discussions have indicated the need of adaptations within these courses in recognition of the learning abilities of individual pupils. In previous chapters the nature of this required work has also been described. That training (or at least a large part of it) which has to do with the vocations and avocations will, under this arrangement, comprise the variable subjects and the free electives. It is perhaps needless to say that subject-matter of vocational or avocational import will not be lumped together, but that it will be divided according to the specific contribution. This general division gives us the core curriculum for the junior and senior high school, with the special curricula of the latter.

*In the junior high school.* A consensus of opinion does not yet exist as regards the extent of the common core of subjects. The tendency is to increase it, particularly in the junior high school. As late as 1920 the commonest provision was for five periods elective in the seventh grade, double this amount in the eighth grade, and three times as much in the ninth. In other words, about four fifths of the seventh grade pupil's time was to be devoted to constants, two thirds

<sup>1</sup> The terminology used is that adopted by the Commission on the Reorganization of Secondary Education. "*Constants*, to be taken by all or nearly all pupils. These should be determined mainly by the objectives of health, command of fundamental processes, worthy home-membership, citizenship, and ethical character. *Curriculum variables*, peculiar to a curriculum or to a group of related curriculums. These should be determined for the most part by vocational needs, including, as they frequently do, preparation for advanced study in special fields. *Free electives*, to be taken by pupils in accordance with individual aptitudes or special interests, generally of a nonvocational nature. These are significant, especially in preparation for the worthy use of leisure." (*Bur. of Educ. Bull.*, 1918, no. 35, p. 23.)

of the time in the eighth, and one half in the ninth. Many now believe that for normal pupils the entire time of the seventh grade should be given to common subjects, and that five periods per week, or about one fifth of the total number, should suffice in the eighth and ninth grades. On the basis of common practice, English, mathematics, and health education constitute the core of the junior high school. In the seventh and eighth grades the social sciences and practical and fine arts are also found. These subjects are being placed upon the required list in the ninth grade. General science is also beginning to find a place in each of the junior-high-school years.

The break in subject-matter which existed under the eight-four plan between the eighth and ninth grades still occurs in many reorganized schools. Ninth-year English has always been more or less of a continuation of the preceding work. There has been, however, an abrupt break in history and mathematics, and there has been the introduction of science at the ninth grade. These traditional practices have naturally resisted both displacement and modification. Natural resistance has been reënforced, moreover, by college-entrance requirements. If fifteen units are required for college entrance, at least three have to be earned in the junior high school. If the colleges specify not only the subjects they will accept but what shall be included in those subjects, integration of the ninth-grade curriculum with that of the seventh and eighth grade will be blocked. For some time the colleges looked with disfavor upon anything that would reduce their influence over the ninth-grade work, and principals of senior high schools were of the same inclination. A change in attitude is becoming evident. This, with the close scrutiny which is being given the junior-high-school curriculum, should eventually result in a real core curriculum.

*In the senior high school.* The core curriculum for the senior high school is also based upon the knowledge, skills, and attitudes which the well-rounded citizen should possess. Citizenship, health, literature, and oral and written expression represent the fields of subject-matter which are now represented. Freedom of choice is usually more restricted during the first of the senior-high-school period, and more time is allowed for specialized work as the period of training draws to a close. It is not improbable, however, that the future will bring a modification of this arrangement. The amount of general training needed increases with each generation, so that it may soon become necessary to devote more time in the senior high school to common education.

*Consecutive organization of subject-matter needed.* The American secondary school has been justly criticized for lack of continuity in the organization of its courses. The program of studies has been full of repetitions. Seventh- and eighth-grade history has been an abridgment of twelfth-grade history; in English precisely the same topics may be found in composition in earlier and in later courses. Duplication of effort between the high school and the first two years of college amounts to fully a year's work. There is a crying need for consecutive organization of subject-matter throughout the entire school system. This does not mean that all duplication should be eliminated; such would be possible only if there were no such thing as forgetting and if large questions and activities did not include smaller questions and activities. But repetition should come because of natural use of a principle previously mastered, not through blind reassignments.

*Variables and free electives.* Besides the constants, which compose the core curriculum, variables and free electives are provided to take account of individual differences. In the junior high school the variables are usually comprised

of foreign languages, art or music, industrial arts, home economics, and elementary business practice, as shown in the sample junior-high-school program of studies below. Variables are chosen under close supervision, which is properly based upon careful consideration of the pupil's abilities, interests, probable length of stay in school, and probable future vocational destination. In the senior high school the variables are organized into special curricula.

This organization should help in overcoming the lack of continuity characteristic of the work of the American secondary school, for which the elective system is partly responsible. Without doubt the elective system possesses a very desirable characteristic — one which should be preserved. It permits flexibility and adaptation to individual interests and capacities. In the four-year high school it has for the most part been supplanted by the major-minor system, which requires the pupil to select his electives among consecutively planned courses in certain fields. For example, the requirement may be two majors of three units each and two minors of two units each, one of the majors being English. The pupil thus gets continuous work in the major fields. He is able to choose, but he is prevented from scattering his effort. In the commercial, industrial, home economics, or agricultural curricula the courses are grouped and arranged consecutively, so that when one is chosen the pupil contracts to do work over a considerable period.

Free electives, as the term indicates, are subjects chosen at the pleasure of the pupil. They should probably be withheld in the junior high school for two reasons: pupils are too immature to choose wisely; and the time is better spent upon the constant and variable subjects. These objections do not hold with equal force in the senior high school, so that the pupil may be allowed to select a portion of his work, either to gratify his own intellectual or æsthetic interests or to

assist in his vocational education. As a reasonable distribution of time in the senior high school, Inglis gives approximately two fifths for constant subjects, a similar proportion for variables, and one fifth for free electives.<sup>2</sup>

**Location of subject-matter by grades.** The task of the curriculum-builder is not complete even when content is determined through scientific analysis, or when the elements common to the education of all are separated from those elements belonging to commerce, industry, or the like. There remains the problem of organizing content into projects that are within the scope of the pupil's thinking and maturity. It is difficult enough to apply the method of job analysis to adult vocations; once the analysis has been made, however, further organization for teaching purposes is not extensive because of the maturity of the students. Interest is easily stimulated because the project is part and parcel of the work students are preparing to do. The case with immature secondary pupils, particularly those of the junior high school, is much different. For them projects must be selected that are within their comprehension, they must be couched in simple language, they must be graded according to frequency of use as well as difficulty, and they cannot ignore the factor of interest.

Final location of subject-matter cannot be based solely upon the judgment of the curriculum maker, or even upon the collective judgment of experienced teachers. Topics should be located as definitely as possible through these agencies, but final arrangement must be based upon experimental teaching, whose results are measured objectively. This final step of the task is not likely to prove the easiest.

*Two opposing theories.* At this point attention should be called to two apparently contradictory points of view. Ac-

<sup>2</sup> Inglis, A. J. *Principles of Secondary Education* (1918), p. 690.



cording to one, education should be viewed as preparation for adult life; according to the other, the child is the center, and the school environment is arranged entirely as his needs and interests dictate. Adherents of the first theory are quite willing to adapt materials as far as possible to the child's stage of maturity, and they are at least tolerant and even sympathetic with children's interests. On the whole, however, they would derive subject-matter from an analysis of the social environment of adult life. This the adherents of the second theory would not do. They are content to study the child's needs and to follow his interests. This, they are convinced, is the only real way to improvement. Adult activities and interests cannot be successfully imposed on the child; on the other hand, preparation for adult life will be taken care of when the needs and interests of children at the various stages of maturity are met.

*A practical viewpoint.* If we could judge the reactions of persons trained in schools planned according to the dictates of each of these theories, we could better decide their merits. Practical experience has shown us the futility of attempting to impose an intellectual, adult point of view upon children; on the other hand, the practical teacher will be disinclined to reject the proposition to give up all "preparation for" the various aspects of adult life. How different would be the curricula in two secondary schools planned to meet the demands of each of these theories?

Let us agree, in the first place, that the needs and interests of five-year-old children are different from those of adults. The kindergarten is well adapted to the age of the children under its tutelage; it is not at all adapted to the needs and interests of adults. These are met, at least reasonably well, by such courses as those in automobile mechanics, commerce, law, etc. — all of which would be meaningless to kindergarten children. How much of this distance has been



traversed by the time the child enters the secondary school? It may be that method of treatment rather than content of instruction is the primary consideration when the needs of secondary pupils are contrasted with those of adults.

Different psychologists set ages varying from thirteen to eighteen as the time when mental maturity is reached (see Chapter VII). The significance of mental maturity is this: at that time the individual is as able as he will ever be to handle totally new material. Admittedly the technique for measuring growth in intelligence is not perfected; nevertheless it is much more refined than our techniques for judging the results of teaching. If we can put any dependence at all in these psychological investigations, we are justified in concluding that, beginning not later than grade nine, we can teach the individual practically any process he will ever be capable of learning, and that we can teach the most of these processes in grades seven and eight.

The interests of secondary pupils in science and in literature are not greatly different from those of adults. The topics found in Table 39, showing the scientific interests of ninth-grade pupils, overlap to the extent of about eighty-five per cent with those of Table 40 (Chapter XIV), where the scientific interests of adults are indicated. The reading interests of twelve- and eighteen-year-old boys and girls are astonishingly similar. They are entirely too similar, for they leave the impression that pupils have profited little from their English courses. If lists of interests comprise legitimate evidence,<sup>3</sup> we can conclude that the subject-matter suitable to the curricula of our two secondary schools will be very similar.

The same conclusions will be reached if use of words and parts of speech in writing and speaking are taken as standards of judgment. The vocabularies of children of the first

<sup>3</sup> See also Uhl, W. L. *The Materials of Reading* (1924), chaps. 4, 6.

eight grades show a correspondence of about sixty per cent with adult vocabularies.<sup>4</sup> In the intricacy of sentence structure and their uses of the parts of speech, children show rapid development between the ages of ten and fourteen. At the eighth or ninth grade their powers approximate those of an adult.<sup>5</sup>

Even though fourteen-year-old boys and grown men are interested in the stars or in radio, they should probably not be taught these topics in the same way. Their backgrounds of experience are different, and different approaches in teaching are desirable. Parallel statements could be made with reference to lessons based upon scientific phenomena of interest to both boys and girls, about the words common to children's and to adults' vocabularies, and about the words which two or more adults use. Adaptation of subject-matter for teaching purposes, rather than subject-matter radically different from that derived through a survey of the general social environment, seems best to answer the question.

**Correlation of subject-matter.** Correlation of subject-matter means making each lesson intelligible and interesting through its connection with the points involved in others. The interrelation of studies has always been a mark of good teaching, for it enables the pupil better to comprehend the bearings and meanings of what he studies. It thus adds interest, for one cannot be interested when he is unable to connect new material with what he knows; it makes transfer of learning more likely, for one of the cardinal points in transfer is conscious application of principles. It is not sufficient to leave the interrelation of subject-matter to the pupil;

<sup>4</sup> Breed, F. S. "What Words should Children be Taught to Spell?" in *Elem. Sch. Jour.* (1925), 26: 118-32; 202-15; 292-306.

<sup>5</sup> Stormzand, M. J., and O'Shea, M. V. *How Much English Grammar?* (1924).

nor is it sufficient to depend upon incidental correlation made at the pleasure of the teacher, for that which is to be taught incidentally is often not taught at all. Definite provision for this important function is needed.

The need for correlation is always present, but it is particularly pressing just now. An extensive revision of studies, such as the one taking place, is bound to exert a more or less disorganizing influence. Some topics are dropped from the requirements, others are modified or added, and others are located one or more grades above or below the places formerly occupied. A teacher soon comes to understand that he is ignorant of what is going on in other classes, and such contacts as might otherwise exist are broken. Giving new subjects a place means a redistribution of time accorded to others. For example, English and the mechanics of English have consumed roughly a third of the time during the seventh and eighth grades. The same recognition of English in the junior high school would mean assigning to that subject eight or ten periods per week — a time allotment that most administrators deem disproportionately large. Granting that the amount of time has some relationship to amount of learning, it is apparent that teaching must become more efficient or loss must ensue. And we are concerned not only with preventing possible losses, but with general improvement in teaching. The only way out of the dilemma is to make each member of the staff a teacher of oral and written expression, penmanship, spelling, and grammar.

Departmentalization and excessive specialization in subject-matter on the part of teachers enhance the pupil's difficulties. The situation is acute in both the secondary school and the college. So acute is it becoming in colleges that some have found it necessary to provide tutors to aid students in filling gaps and in integrating their knowledge.

In the secondary school the situation can best be met by getting teachers to realize that they are not primarily concerned with subjects, but that their first concern is the development of their pupils. Stress on the aims and methods of English, of history, of mathematics, or of science must give way; in its stead must be placed emphasis upon the characteristics of boys and girls and upon immediate and remote objectives in education.

*The principal's council.* In the discussion of health education, training for moral character, and other objectives of education it was stated that work in each of these lines could be improved through coördinating the activities already found in the school. The time has perhaps come, at least in progressive secondary schools, when heads of departments should be superseded by directors of health education, or citizenship, or the like. An example of what is meant is found in the director of vocational education or of vocational guidance. The duty of the director of health education, for example, will be similar to that of the director of vocational guidance; that is, he will have charge of the health program, he will be responsible, more than any one else, for formulating its objectives and planning its activities. One of his first duties will be to examine existing courses, such as biology, general science, community civics, or home economics, to see what each contributes toward health; another duty will be to coöperate with the teachers of these subjects in giving the present diverse health topics their proper place in the whole scheme. In large high schools it may, and probably will, prove advisable to organize the directors, each of whom is charged with the responsibility of studying and organizing the activities of the school with reference to a specific objective, into a council which shall confer with the principal on matters relating to the administration of the school. In small high schools a

similar although less elaborate organization should prove beneficial.

An administrative officer, usually the principal, is charged with general supervision and improvement of teaching. Upon him rests the responsibility of final interrelation of the materials of instruction.<sup>6</sup>

*Teachers.* If an instructor is to organize his teaching effectively, he must have knowledge of the training his pupils have had in previous grades and the work that will be demanded of them in later grades. Grade organization, buildings devoted to elementary work in contrast to junior-high-school work, or to junior-high-school work as contrasted with senior-high-school work, segregate teachers and reduce to practically zero the number of contacts between the staffs of the various school units. Teachers in the upper grades sometimes arrogate to themselves unwarranted feelings of superiority; they ignore the fact that it is natural for human beings to forget, and they condemn the teachers to whom their students have previously been assigned for not doing better work. The plan of visitation, used in some places, helps to increase mutual understanding. When junior-high-school teachers visit the elementary grades they see their future pupils at work and gain a better understanding of the elementary teacher's problems. When elementary teachers visit the junior high school, they see their former pupils at work, and learn of the demands which those under their tutorship will later meet. Acquaintances thus formed between teachers are usually cordial — not a negligible point in the consideration of the whole problem.

**Illustrative programs of study.** *For the junior high school.*

<sup>6</sup> The principal's council is recommended by the Commission on the Reorganization of Secondary Education. *Bur. of Educ. Bull.* (1918), no. 35, p. 28.

The accompanying program of studies for the junior high school represents a distinct departure from the type of work usually found in grades 7 to 9, and it is at the same time a step in advance in curriculum making. It will be noticed that the usual custom of allowing five periods a week for each of the subjects has been abandoned. This is due primarily to the pressure for time. How much will be lost in learning it is impossible to say, as experimentation is lacking. We do know that learning is not always in proportion to the amount of time spent, and from this basis a guess might be hazarded that pupils will accomplish as much or nearly as much in four periods per week as five. Another interesting point about this program is the absence of electives in the seventh year, and the recommendation that they be delayed until the middle of the eighth.

The main idea back of the recommendation is a coördinated, integrated curriculum for the junior high school — a curriculum in which the ninth grade is not an unassimilated lump, dropped down from the four-year high school. At the same time, demands of individual pupils are met at least reasonably well. Some electives are provided, and definite provision is made for guidance. In this program of studies extra-curricular activities are no longer "extra," but are made an integral part of the life of the school.

*A program of studies for the small four-year high school.* Small high schools, of which there are such a large number in the United States, are greatly handicapped in their curricular offerings. Their students are too few to allow many classes, hence restricted programs result. In many such districts it is felt that one or two lines of vocational work are necessary in addition to the regular academic, and the program of studies is expanded. The result is a great increase in cost. How to provide necessary subjects, how to recognize the de-



PROGRAM OF STUDIES FOR THE JUNIOR HIGH SCHOOL <sup>7</sup>

REQUIRED	GRADE 7	GRADE 8	GRADE 9
Health.....	3	3	3
English.....	5	4	4
General mathematics.....	5	4	4
Social studies.....	4	4	4
Natural science.....	4	3	3
Fine and practical arts.....	5	4	4
Social activities.....	3	3	3
Guidance.....	1	1	1
Elective.....	0	2½ or 5	5

Grade 8 or second semester of Grade 8:

*Foreign language*

*Art or music*

*Shop work or home economics*

*Junior business training*

*Vocational industrial or household arts — half time*

Grade 9:

*Foreign language*

*Art or music*

*Shop work or home economics*

*Junior business training*

*Typewriting, bookkeeping*

*Vocational industrial or household arts — half time*

### *Explanatory notes:*

Electives may begin either at the end of the seventh grade or at the middle of the eighth — preferably the latter. In case they are not begun until the middle of the eighth grade, the seventh-grade program continues for the first semester of the eighth grade.

A close connection should exist between social activities and guidance.

Fine and practical arts include art, music, industrial arts, and home economics.

There are five periods a week for each elective or group of electives except in the case of the vocational pupils, who, under the provisions of the Smith-Hughes law must take one half (3 hours) of the school day.

<sup>7</sup> Glass, J. M. *Curriculum Practices in the Junior High School and Grades Five and Six*. Sup. Educ. Mon. (1924), no. 25, pp. 20-22.

In this and the following programs of study, required subjects are in regular type, variables and free electives in italics.

mands of pupils who are going to college, how to give non-college-preparatory students subject-matter suitable to their needs, and how to make an equitable adjustment of the teaching load, are vexing questions.

Such a situation existed in Indiana, where nearly three fifths of the high schools enroll not more than 75 students each, and where approximately 600, or nearly three fourths of all, enroll not more than 100 pupils each. As a remedy for the situation a program was drawn up which is a radical

#### PROGRAM OF STUDIES FOR SMALL FOUR-YEAR HIGH SCHOOLS IN INDIANA <sup>8</sup>

ALL PUPILS	ACADEMIC PUPILS
English 1	<i>Algebra</i>
English 2	<i>Geometry</i>
English 3	<i>Foreign Language 1</i>
English 4	<i>Foreign Language 2</i>
Civics	<i>Home Economics 1 unit</i>
General History	
American History	
Economics and Govern- ment	NON-ACADEMIC PUPILS
General Science	<i>Home Economics 1 or Agriculture 1</i>
Biology	<i>Home Economics 2 or Agriculture 2</i>
Physics	<i>Home Economics 3 or Agriculture 3</i>
	<i>Home Economics 4 or Agriculture 4</i>

#### Pairs in alternation

*Foreign Language 1 and Foreign Language 2*  
*Algebra and Geometry*  
 American History and Economics and Government  
*Home Economics 1 and Home Economics 2*  
*Home Economics 3 and Home Economics 4*  
 English 3 and English 4  
*Agriculture 3 and Agriculture 4*  
 Biology and Physics

<sup>8</sup> State of Indiana, Department of Public Instruction, *Bull.* 56, 1922. The program was arranged by Professor Alexander Inglis.

departure from the usual type. Certain studies were recommended for all pupils, some were advised for the academic or college-preparatory group, and others for the non-academic group. It was planned to offer a considerable portion of the work every other year only, so that the range of offerings might be increased. The plan offers valuable suggestions for the organization of small high schools throughout the country.

*Program of studies of a city system.* The program of studies for Minneapolis is presented as representative of the secondary work done in progressive cities. Minneapolis contains three senior-junior high schools, five junior high schools, and five four-year high schools. This state of partial reorganization is again typical of the larger centers, for it requires a period of years to incorporate the junior-high-school system in a city. A building program must be decided upon, subject-matter must be revised, teachers prepared for the new work, and countless other details must be considered.

There is evidence that great care is exercised in Minneapolis to help pupils select work ahead, covering at least the three years of the senior high school. Parents are impressed with the importance of selection, and pupils are urged to make their plans known to the principal at the time they enroll in the senior high school. To provide for individual needs and interests, the senior-high-school program is grouped roughly into four curricula: college preparatory, industrial training, business training, and training in home-making. Combinations of courses are suggested for pupils whose interests lie in these directions.

It will probably strike the reader that the array of courses is more academic and less industrial than one should find in a truly comprehensive senior high school. English, foreign languages, mathematics, and science are offered more plenti-

fully than are industrial arts, commercial work, or home economics. On the other hand, a student may devote a fourth of his time to consecutive courses in the social sciences, or he may take art or music. The vocational courses offered in the senior high schools by no means exhaust the opportunities for specialized training. Technical programs are offered in three of the four-year high schools, and in a two-year vocational high school. These are regarded as furnishing specific preparation for immediate entrance into a field of industry.

PROGRAM OF STUDIES IN THE JUNIOR AND SENIOR HIGH SCHOOLS  
OF MINNEAPOLIS, 1923-24

JUNIOR HIGH SCHOOL

SEVENTH GRADE		EIGHTH GRADE		NINTH GRADE	
English	8	English	8	English	5
Geography	5	History	5	Com. life problems	5
Mathematics	5	Mathematics	5	<i>Mathematics</i>	5
Art	2	Art	2	<i>Art</i>	2
Manual training	5	Manual training	5	<i>Manual Training</i>	5
or		or		or	
Home economics	5	Home economics	5	<i>Home Economics</i>	5
Chorus	2	Chorus	2	Chorus	2
Physical ed.	2	Physical ed.	2	Physical education	2
				<i>Latin</i>	5
				<i>Elem. Science</i>	5
				<i>Com'l Geography</i>	5
				<i>Penmanship</i>	5
				<i>Typewriting</i>	5
				<i>Music</i>	5

SENIOR HIGH SCHOOL

TENTH GRADE		ELEVENTH GRADE		TWELFTH GRADE	
English	5	English	5	English	5
Chorus	2	Amer. history	5	Civics*	5
Physical ed.		Physical ed.		Physical ed.	
Electives (15)		Electives (10)		Electives (10 or 15)	

# THE PROGRAM OF STUDIES

601

TENTH GRADE		ELEVENTH GRADE		TWELFTH GRADE	
<i>Social Science</i> (5)		<i>English**</i> (5)		<i>English</i> (5)	
<i>World History</i>	5	<i>Public Speaking</i>	5	<i>Public Speaking</i>	5
<i>Foreign Language</i>		<i>Newspaper</i>	5	<i>Debate</i>	5
(5 or 10)		<i>Social Science**</i>		<i>News</i>	5
<i>Latin</i>	5	<i>Sociology</i>	5	<i>Modern Drama</i>	5
<i>Norse</i>	5	<i>Foreign Language</i>		<i>Social Science</i> (5)	
<i>Swedish</i>	5	(5 or 10)		<i>Sociology</i>	5
<i>French</i>	5	<i>Latin</i>	5	<i>Economics</i>	5
<i>Spanish</i>	5	<i>Norse</i>	5	<i>Com'l Law</i>	5
<i>German</i>	5	<i>Swedish</i>	5	<i>Foreign Language</i>	
<i>Mathematics</i> (5)		<i>French</i>	5	(5 or 10)	
<i>Gen. Mathematics</i>	5	<i>Spanish</i>	5	<i>Latin</i>	5
<i>Science</i> (5)		<i>German</i>	5	<i>Norse</i>	5
<i>Biology</i>	5	<i>Art</i>	5	<i>Swedish</i>	5
<i>Botany</i>	5	<i>Manual Training</i>	5	<i>French</i>	5
<i>Art</i>	5	<i>Home Economics</i>	5	<i>Spanish</i>	5
<i>Music</i>	5	<i>Music</i>	5	<i>German</i>	5
<i>Manual Training</i>	5	<i>Commercial</i>		<i>Mathematics</i> (5)	
<i>Home Economics</i>	5	(5 or 10)		<i>Adv. Algebra</i>	5
<i>Commercial</i> (5 or 10)		<i>Bookkeeping*</i>	5	<i>Solid Geometry**</i>	5
<i>Bookkeeping</i>	5	<i>Stenography</i>	5	<i>Trigonometry**</i>	5
<i>Typewriting</i>	5	<i>Science</i> (5)	5	<i>Science</i> (5)	
		<i>Botany</i>	5	<i>Botany</i>	5
		<i>Physics</i>		<i>Chemistry</i>	5
				<i>Physics</i>	5
				<i>Art</i>	5
				<i>Manual Training</i>	5
				<i>Home Economics</i>	5
				<i>Music</i>	5
				<i>Commercial</i> (5)	
				<i>Stenography</i>	5

## Explanatory notes:

\* indicates that the subject is given only during the first semester.

\*\* that it is given only during the second semester.

Courses in music involve private lessons as well as daily home practice, and are coördinated with the school through orchestra and harmony classes. Orchestral instruments, piano, pipe organ, or voice are the subjects included.

In the junior high school, manual training includes mechanical drawing (30 weeks); wood shop, sheet metal, electricity, printing (not less than 10 nor more than 30 weeks each). Home economics

includes sewing (construction and care of clothing), cooking (selection, preparation, and service of foods), and home management (cost and care of home).

In the senior high school, manual training includes advanced mechanical drawing, architectural, and machine drawing, advanced wood shop (cabinet making, carpentry), and machine shop. Home economics includes selection and preparation of foods, bacteriology, dietetics, home management, clothing, textiles, millinery, costume design, and home decoration.

*Program of studies for Pennsylvania senior high schools.* Below is the program of studies recommended by the office of the State superintendent of public instruction for the senior high schools of Pennsylvania. It is preceded by a junior-high-school program very similar to the one given in this chapter. It will be noticed that the core curriculum idea is prominent, and that subjects have been organized into special curricula for the different groups of pupils.

#### SENIOR-HIGH-SCHOOL PROGRAM OF STUDIES FOR PENNSYLVANIA <sup>9</sup>

TENTH YEAR							
REQUIRED GROUP:		ACADEMIC GROUP:		COMMERCIAL GROUP:		PRACTICAL AND FINE ARTS GROUP:	
English	1	Mathematics	1	Bookkeeping	1	Bookkeeping	1
History	1	Latin	1	Shorthand		Economic	
Health	1	Modern		Type-		Geography	1
		Language	1	writing or	1½	Home Eco-	
		Science	1	Commercial		nomics	1
				and Eco-		Art	1
				nomic		Music	1
				Geography	1		
ELEVENTH YEAR							
English	1	Mathematics	1	Shorthand	1	Physics or	
American		Latin	1	Typewriting	½	Chemistry	1
History	1	Modern		Bookkeeping	1	Home Eco-	
Health	1	Language	1	Office Practice	½	nomics	1
		Science	1	Business Or-		Mechanical	
				ganization	1	Drawing	1
				Retail Selling	1	Shop Work	1
						Art	1
						Music	1

<sup>9</sup> From the *Pennsylvania High School Manual*.



## TWELFTH YEAR

REQUIRED GROUP:	ACADEMIC GROUP:	COMMERCIAL GROUP:	PRACTICAL AND FINE ARTS GROUP:
English $\frac{1}{2}$ -1	<i>Mathematics</i> 1	<i>Shorthand</i> 1	<i>Physics or</i>
Problems of Demo-	<i>Latin</i> 1	<i>Business Eco-</i>	<i>Chemistry</i> 1
cracy $\frac{1}{2}$ -1	<i>Modern</i>	<i>nomics</i> 1	<i>Home Eco-</i>
Health $\frac{1}{2}$	<i>Language</i> 1	<i>Commercial</i>	<i>nomics</i> 1
	<i>Science</i> 1	<i>Law</i> 1	<i>Mechanical</i>
		<i>Office Practice</i> 1	<i>Drawing</i> 1
		<i>Advertising</i>	<i>Shop Work</i> 1
		<i>and Sales-</i>	<i>Art</i> 1
		<i>manship</i> 1	<i>Music</i> 1
		<i>Retail Selling</i> 1	

VOCATIONAL GROUP: Fifty per cent trade courses, 25 per cent related courses, and 25 per cent core curriculum as above.

Pupils studying various subjects. Table 59 shows the percentages of four-year high-school students studying the various subjects since 1890. In interpreting the table, it should be pointed out that the actual situation is sometimes hidden by the way in which the figures appear. We cannot tell, for example, which of the history courses has proved most attractive; nor can the numbers enrolled in freehand as contrasted with mechanical drawing be determined. It is probable that "civics" is correctly interpreted as community civics, and that some of the pupils listed under arithmetic should really be classified under business arithmetic. It is likely that music pupils include those enrolled in chorus, harmony, orchestra and glee clubs, and perhaps instrumental music or voice.

Some of the subjects found their way into the program before the dates indicated in the table. General science had made considerable headway by 1915, and many high schools were offering commercial work as early as 1905. Notwithstanding these inaccuracies, the table gives a good general view of the ways in which high-school teachers and pupils are spending their energies. It also gives a good general

view of the change of emphasis placed upon certain subjects.

It will be observed that, in spite of the attacks upon it, Latin is holding its own remarkably well. In 1922, it enrolled a slightly larger number of students than the combined modern languages. The decline of physics and botany stands out noticeably. Both these sciences should prove attractive to young people, but interest in them has probably been killed through their over-formalization. Physical geography has been almost entirely supplanted by general science, and is kept alive because certain eastern colleges will credit it for college entrance but refuse to recognize general science. Interest in history has apparently remained constant, but interest has increased in the other social sciences. The large enrollment in algebra and geometry is caused by requirements rather than elections. These subjects are commonly offered in grades nine and ten, where nearly two-thirds of the four-year high-school enrollment is found. The relative decline since 1910 in the numbers studying algebra and geometry is probably caused by the practice, existing in some quarters, of placing them upon the elective list — a practice that will undoubtedly spread, with a consequent further decline in the numbers of pupils studying algebra and geometry. The high percentage enrolled in English is similarly due to requirement.

Among the vocational subjects, home economics has made slight gains, manual training has scarcely held its own, while agriculture has shown considerable decrease. Manual training probably includes more than woodwork, as sheet metal, iron, and electrical work are commonly found in large high schools. Instruction in agriculture is perhaps more effective than formerly, even with its smaller enrollment, for Smith-Hughes courses are supplanting the more academic courses existing prior to 1917. The commercial are by far the most

# THE PROGRAM OF STUDIES

605

TABLE 59. PERCENTAGES OF TOTAL NUMBER OF STUDENTS IN CERTAIN STUDIES IN PUBLIC HIGH SCHOOLS SINCE 1890 <sup>10</sup>

	1890	1895	1900	1905	1910	1915	1922
Total number students in schools reporting studies	202,963	350,099	519,251	679,702	*739,143	1,165,495	2,155,460
Students in —							
Latin.....	34.69	43.97	50.61	50.21	49.05	37.32	27.52
French.....	5.84	6.52	7.78	9.14	9.90	8.80	15.46
German.....	10.51	11.40	14.33	20.25	23.69	24.39	.65
Spanish.....					.67	2.39	11.26
Greek.....	3.05	3.10	2.85	1.47	.75	.29	.09
Algebra.....	45.40	54.27	56.29	57.51	56.85	48.84	40.15
Geometry.....	21.33	25.34	27.39	28.16	30.87	26.55	22.68
Trigonometry.....		2.53	1.91	1.71	1.87	1.48	1.53
Astronomy.....		4.79	2.78	1.22	.53	.28	.07
Physics.....	22.21	22.77	19.04	15.66	14.61	14.23	8.94
Chemistry.....	10.10	9.15	7.72	6.76	6.89	7.38	7.40
Physical geography.....		23.89	23.37	21.52	19.34	14.58	4.28
Zoölogy.....					8.02	3.21	1.53
Botany.....					16.83	9.14	3.82
Biology.....						6.90	8.78
Geology.....		5.00	3.61	2.34	1.16	.48	.16
Physiology.....		29.95	27.42	21.96	15.32	9.48	5.08
Hygiene and sanitation.....							6.06
General science.....							18.27
Psychology.....		2.74	2.38	1.31	.96	1.17	.87
Principles of teaching.....							.87
Rhetoric.....		32.05	38.48	48.54	57.10	58.42	78.59
English literature.....			42.10	49.34	57.09	55.82	
American history.....							15.29
English history.....							2.87
Ancient history.....	27.31	34.33	38.16	40.88	55.03	50.54	17.23
Med. and mod. history.....							15.35
Civil government.....			21.66	17.97	15.55	8.46	19.32
Civics.....						7.08	
Sociology.....							2.38
Economics.....							4.80
Agriculture.....					4.66	7.17	5.11
Home economics.....					3.78	12.89	14.27
Manual training.....						11.17	10.49
Drawing.....						22.87	14.75
Music.....						31.50	25.27
Arithmetic.....							10.53
Bookkeeping.....						3.42	12.55
Shorthand.....							8.90
Typewriting.....							13.06
Commercial arithmetic.....							1.47
Commercial law.....							.91
Commercial geography.....							1.70
Commercial history.....							.39
Penmanship.....							1.70
Other commercial subjects.....							1.31

\* Beginning with 1910 the percentage of students in each study is based upon the number of students in the schools reporting studies. In previous years the percentages were based upon the total number of students in school.

<sup>10</sup> *Bur. of Educ. Bull.* (1924), no. 7, pp. 46-47.

important vocational courses from the standpoint of numbers, with approximately a third of all high-school pupils pursuing them.

**Pupils enrolled in various curricula.** Table 60 shows the numbers of pupils enrolled in the various curricula. The outstanding facts are the large number found in the academic curriculum, and the strong appeal the commercial curriculum makes in comparison with industrial work. There have been, however, more and more pupils desirous of enrolling in industrial curricula. A comparison of the figures in Table 60 with similar figures collected in 1918 shows that the increase in enrollments in trade and industrial courses has been 153 per cent. Increased enrollments in academic courses amount to 86 per cent, in comparison with gains in manual training and home economics curricula totaling about 60 per cent each. Commercial curricula have gained 55 per cent; agriculture curricula, 46 per cent; and teacher-training curricula, 28 per cent. The apparent discrepancies between Tables 59 and 60 are due in part to the fact that in the former, all enrollments are counted; in the latter, enrollments by curricula only are counted.

TABLE 60. ENROLLMENT BY CURRICULA IN PUBLIC HIGH SCHOOLS <sup>11</sup>

CURRICULUM	SCHOOLS REPORTING	BOYS	GIRLS	TOTAL
Academic.....	14,783	1,113,831	1,204,532	2,318,363
Commercial.....	3,742	143,991	286,984	430,975
Home Economics.....	3,860	288	159,852	160,140
Technical or Manual Training.....	2,089	148,736	6,431	155,167
Agriculture.....	2,604	48,139	8,330	56,469
Industrial or Trade Training.....	434	32,709	9,289	41,998
Teacher Training.....	1,453	4,571	29,567	34,138

<sup>11</sup> *Bur. of Educ. Bull.* (1925), no. 40, pp. 35-38. Three hundred schools reported 55,964 students enrolled in military drill. In 1920 there were 688 such schools, offering it to 98,831 boys.

**Specialized curricula.** Various general studies, along with specialized courses, are grouped together to form specialized curricula. Those for home economics, business, agriculture, and industry have been considered at the appropriate places. It remains to speak briefly of the undesirable features of specialized curricula in the junior high school, and to call attention to the college preparatory and the general curricula of the senior high school.

*In the junior high school.* During the first decade of junior-high-school development, the policy was often followed of arranging the program of studies into college preparatory, commercial, home economics, and industrial divisions. The assumption was made, perhaps unconsciously, that courses to form a special curriculum could be selected without error, and that the pupil could choose correctly. Sometimes provision was made for transfer if it were shown that the pupil was unfitted for the work he had chosen, but more often he was given to understand that after the first year it would be difficult to change. Lack of flexibility at a time when ability should be tested proved to be one of the greatest faults of this arrangement. It was also defective in not providing sufficient time for common essentials. This organization receives little support from educational theorists.

*The college preparatory curriculum.* Roughly a third of all high-school graduates enter a college or a university, and an additional fifteen per cent continue their education in some other type of higher educational institution. Although the college-preparatory function should not dominate the program of studies, as it so often does, the college-preparatory group is nevertheless a very important one. The subjects which they study will be largely determined by the higher institutions which they enter. Since college prescriptions vary greatly, it becomes necessary to vary the

subject or course offerings within the college-preparatory curriculum. Prospective students of technical institutions have to meet the requirements in science and mathematics, prospective students of liberal arts colleges the prescriptions in foreign languages, and so on. The small school finds it impossible, often, to offer courses for the college-preparatory and the non-college-preparatory groups, with the result that the demands of the former are given precedence.

*The general curriculum.* For those pupils who will remain in school until graduation from senior high school, but who will not continue their education beyond that point, and who have not decided upon a vocation, a general curriculum should be provided. Such pupils will, of course, be subject to the same requirements as pupils enrolled in other courses, that is, they will be required to study the constant subjects. They too will be allowed the privilege of free electives. The remainder of their time may be distributed among the sciences, mathematics, foreign languages, and the like. If the school is sufficiently large, it is altogether likely that a modification of some of these subjects to fit the special needs of the general students would be desirable. Subjects planned for special purposes are not entirely suitable for the general students.

**Problems in curriculum-making.** The Commission on the Reorganization of Secondary Education recommends that the work of the senior high school should be organized into differentiated curriculums. The Commission expresses the opinion that in the eighth and ninth grades of the junior high school some pupils may well devote one fourth to one half of their time to curriculum variables; in the senior high school the amount of time spent upon variables should vary with the pupil and the curriculum. This is in general accord with secondary organization, although as yet the recommendations of the Committee with regard to



additional vocational work for pupils about to discontinue school have not been generally followed.

*A single general curriculum vs. several specialized curricula.* In interesting contrast is the proposal to make the secondary-school program of studies almost entirely general in nature, with all pupils pursuing the same studies until they have reached the point of elimination, when they would enter training courses designed to prepare them for the vocations they expect to follow. This is essentially Bobbitt's view,<sup>12</sup> which he advocates on the ground that the amount of general training needed by the normal citizen goes much beyond that needed a generation ago. The entire public school period from the kindergarten to the end of the senior high school or junior college, in his opinion, can well be devoted to it.

His point of view is as follows: General education will result from experiences on the play level, where the child develops mentally and physically without consciousness of the relation of his developing powers to specific functions, and where a foundation is laid for the specific abilities which are later to be built; and it will result also from functional education, where one is trained to do, and to do well, those things which a responsible man or woman has to do. In functional education both pupils and teachers should be conscious of the educational ends. Training for social intercommunication, health, citizenship, general social activities, spare-time activities, religious activities, parental activities, non-vocational practical activities, and training to keep one's self mentally fit represent non-specialized abilities to be developed in all individuals. They indicate the broad range of constants for all students.

The purpose of the junior high school (following Bobbitt's theory) is to give general and not vocational training. Even

<sup>12</sup> Bobbitt, F. *How to Make a Curriculum* (1924), pp. 1-75.

in the senior high school and junior college students should be encouraged to take the entire general training course before entering upon vocational training. Each line of training should provide for continuity of growth so that, at whatever point a pupil may drop out of school, he will have had training along all lines. The basic lines of training should never be elective, and work taken in addition to them will be selected or continued only if the pupil is making satisfactory progress in his basic subjects. It is true, of course, that differences in native ability make it impossible for all pupils to accomplish equal work. There should be at least three groups of students classified on the basis of ability: a high-ability group, which will achieve specially high standards in the field of the basic training; a middle-ability group, who will devote their major time and effort to achieving sufficiently high standards; and a sub-average group, who will usually devote their entire time to achieving sufficiently high standards in the basic lines of training. The detailed content of the basic training should be formulated first for the more capable students; courses for less capable individuals can then be derived through abbreviation, elimination, lowering of standards, or providing an easier gradient. The most able group of pupils will be able to take advantage of extra subjects; extras will be allowed to average pupils only as they are found to possess special aptitudes or special industry or ambition, and to sub-average pupils only as they show well-marked special aptitudes.

Specialization means not general education but vocational specialization, and this should come, except in special cases, immediately after the close of the general training. Into specialized vocational courses should go only those pupils who have chosen an occupation and who expect to go to work immediately upon completion of training. The content of an occupational course should come from an analysis

of the activities of that occupation; its length should depend upon the amount of time actually needed to master those activities. Appropriate occupational training should be provided for pupils who leave school toward the end of the junior high school or during the senior high school. In general there should be no mixture of general and vocational education. Vocational courses parallel with the general training "are probably justified only in the case of those vocations that one can enter currently into, usually at home, during school days: agriculture, animal husbandry, household occupations; or those which can run as extras for the general training of amateurs while at the same time vocational training of professionals."

Bobbitt's views are not dissimilar to those of Snedden, who has for a number of years advocated a division between what he terms liberal and vocational education. Snedden disagrees sharply with the Commission on the Reorganization of Secondary Education with respect to the desirability or possibility of carrying on side by side vocational education and general education.<sup>13</sup> In his opinion, the high school should content itself with giving general education; special vocational schools should be established for vocational education.

It is, of course, impossible to decide the question without more information than is now at our disposal, but it should be pointed out that high-school administrators regard vocational courses as one of the chief means of keeping pupils in school and as one of the strongest sources of motivation. Vocational courses enrich the entire program of studies, and they increase the amount of general education received by pupils who, if they were not permitted to study them, would drop out of school. On the other hand, thousands of pupils use the secondary school as a place to gain general training,

<sup>13</sup> Snedden, D. *Vocational Education* (1920), pp. 94-98.

and enroll upon completion of their general training in specialized commercial or industrial schools for periods of intensive training in vocational lines.

*An apparently rational curriculum may prove unworkable.*

One thing seems certain: a system of secondary education may be logically planned, and still prove unworkable and hence undesirable in the end. It may make provision at a certain period for exploration of interests and abilities, to be followed by vocational decision and by specialized training, and it may be found later that the pupil is unable, at the age set, to decide whether his life's work is to be in the commercial, the professional, agricultural, or industrial field. The various courses may be planned in detail, so as to include each at the proper time and place the elements deemed necessary for the most complete education possible to give in the time available — and then it may be found that the whole scheme is faulty because young people react to it in unforeseen ways. Against the recommendations of the Commission it may be asserted that their plan is too logical, and that less effective vocational training will be provided than under a plan which provides special vocational training upon completion of general education; in its favor it may be urged with considerable force that parallel vocational and general curricula insure longer stay in school, enrichment of the whole program of studies, and consequently better general education; and that it contributes in no small way to like-mindedness and social solidarity through providing a common fund of knowledge and experiences which are the outcome of pursuit of common subjects and of social intermingling of pupils.

#### TOPICS FOR DISCUSSION AND INVESTIGATION

1. Secure the most recent figures showing the number of small high schools and the number of pupils they enroll. Interpret the figures in light of the theme of this chapter.

2. Small high schools are likely to be more "academic" than the large high schools. How do you account for this? Is the condition desirable or undesirable?
3. What difficulties will be encountered in small schools which attempt the plan of alternating subjects?
4. Of what value are investigations summarizing present curriculum practices in secondary schools?
5. What steps can be taken to secure the continuous reorganization of the curriculum?
6. State specifically how a teacher can assist in the correlation of subject-matter.
7. Investigate the program of studies recommended for the secondary schools of your State by the state superintendent or commissioner of education. Criticize positively and negatively.
8. Using the data in Table 69, draw a curve or diagram to show the increase or decrease in enrollment in the subject of your special interest. Compare with the enrollment in your city and State. What is the interpretation?
9. Compare the programs of studies of the Latin grammar school, the academy, and the early high school with the program of studies of the modern high school.
10. Compare the curricular offerings of the college of one hundred years ago with the offerings of a city high school.
11. What is meant by equal educational opportunities? Should certain pupils be excluded from the senior high school on the ground that they cannot profit from the program of studies?

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See also the bibliography for Chapters XII and XIII.



## CHAPTER XXII

### EXTRA-CURRICULAR ACTIVITIES

**The new conception of extra-curricular activities.** Although widely used, the term "extra-curricular" is misleading. Its origin dates back to the time when the purpose of the school was conceived to be to teach the subjects contained in the program of studies. Good teaching was understood to be a combination of skills which enabled the instructor so to manage his classes that they gained mastery over subject-matter. The recitation method was the accepted procedure. Such student organizations as were in existence were looked upon as in addition to the curriculum and as serving another purpose, and hence were extra-curricular.

This attitude has been profoundly modified. Such activities are now regarded as truly educative. In fact, the position is often maintained that they contribute just as effectively, if not more effectively, toward the realization of the aims of secondary education than do the regular studies. We really know little about the way habits and ideals controlling conduct are formed. It may be that those coming from the school subjects are less influential, and those originating elsewhere are more influential, than commonly supposed. Club work may develop worthy interests later to be utilized in use of leisure; it may also serve a purpose in vocational education through offering an opportunity to gain information about the occupations or for try-outs. Athletics provides exercise necessary for health along with participation in group activity. The school paper gives, from the standpoint of those actively engaged in producing it, jour-

nalistic or business training; from the standpoint of the school, it is a medium for understanding the problems common to the school community. Student participation in school government affords practice in duties of citizenship. If all this is true, extra-curricular activities should be regarded, not as "extra," but as a part of the school. The strongest evidence that they are so regarded is the fact that they are given recognition, supervision, and encouragement and are coming to occupy a regular rather than an incidental place in the schedule.

The "regular" school activities should be enriched through the extra-curricular. The latter grow out of pupils' instinctive interests and needs, which after all are not far removed from what we commonly call the curriculum. After a period of growth and refinement, many of the extra-curricular activities will doubtless be taken over and made a part of the curriculum. This has already occurred in many cases. For example, music, debating, and games were formerly almost entirely extra-curricular; they are now an integral part of the curricular offerings in many schools. The process of incorporating in the curriculum activities once extra-curricular in nature does not necessarily mean that the latter will be impoverished. If the spontaneity of pupils' interests is recognized and flexibility of organization is maintained for their expression, abundant new activities will doubtless spring up as time goes on. Regarded in this manner, extra-curriculum activities will remain a rich source of suggestion for vitalizing the regular curriculum.

**Recognition of extra-curricular activities one phase of the socialization of secondary education.** The development of extra-curricular activities is in reality but one aspect of the socialization of the American secondary school. Other significant aspects have to do with the curriculum and methods of teaching. In preceding chapters the socialization of the

curriculum has been treated in some detail. Here it may be reasserted that socialization means, first of all, a clear statement of immediate and remote educational aims, derived from the desirable activities in which immature and mature members of society engage. Next it means selecting, from existing materials of instruction, those elements which contribute most effectively toward the realization of those aims. It means enrichment through the addition of new materials of social significance. Since society is dynamic in nature, the only possible procedure is one which makes curriculum revision or construction continuous. The final step in the process consists in organizing and locating teaching units. At this point the problem of method is encountered. It is met by gauging materials to the needs, interests, and abilities of children, by substituting for the old-fashioned assignment a problem which challenges the interest and activity of the pupil, by replacing individual competition with group activity, dialectic with extended pupil responses, and teacher activity with group activity. This is, in a word, the socialized-project method.

The final aspect of socialization of secondary education is the development of the so-called extra-curricular activities. It is our purpose in this chapter to describe briefly the form in which the most common of these activities occur. First, however, it may be well to examine briefly certain educational fundamentals involved, and to indicate guiding principles in organizing the activities.

**Educational principles supporting extra-curricular activities.** One who believes that secondary education should give preparation for all the desirable activities which adults face will favor extra-curricular organizations; for, in striving to organize the curriculum in such a way as to do the greatest good for the greatest number, there are likely to be many omissions. Some of these omissions will affect a few pupils;

some will affect many. Extra-curricular activities will spring up to make good these deficiencies. An interest is stimulated in dramatics, for instance, through contacts gained in English classes. To further this interest pupils form a dramatic club. Until we have made far more progress in combining socialized methods in the classroom with individualized instruction, there will be need for many such organizations. They will be at least a partial compensation for curricular deficiencies.

*Self-activity.* "Learn to do by doing" is the popular statement for the educational principle of self-activity. Whether the popular statement means that one learns best by doing or whether it means that one learns only by doing, is not clear. On this point, however, educational theory is outspoken. The doctrine of self-activity means that a pupil is educated only through his own responses. This doctrine is back of the condemnation so often meted out against methods of passive absorption, for which should be substituted a series of mental and physical changes or actions definitely adapted to accomplishing an end. There should be no disposition to think that all extra-curricular organizations utilize to the maximum the principle of self-activity, any more than that all self-activity is excluded from the classroom. But extra-curricular activities have every advantage in this respect when contrasted with traditional classroom methods.

*Interest.* When one feels that an enterprise or a topic under discussion is of importance to himself, he is interested. Given interest, attention and activity follow. This has become commonplace in educational theory, which teaches that economy in learning is secured through utilizing effectively the active interests of pupils. How far the school has succeeded in this we shall not attempt to say. It will be said, however, that pupils' interests are utilized in curricular

matters only when continuous vigilance is exercised. Classroom affairs thus tend to fall behind or to become out of joint with interests. Feelings of alienation and repulsion, accompaniments of the presentation of subject-matter foreign to interests and experiences, may be ignored without disrupting a class. In extra-curricular activities they cannot exist if the organizations are to continue. Their very life depends upon their power to awaken congenial responses in the minds of pupils — in other words, to tap their interests.

*Real education improves existing conditions.* Finally, the extra-curricular organization at its best is an excellent example of the application of the theory that the first purpose of the school is "to teach pupils to do better the desirable activities that they will perform anyway."<sup>1</sup> In a broad sense, this principle embraces those of self-activity, interest, and coöperative learning. It is made concrete through activities. Children prepare for citizenship by being good citizens and by taking part in the solution of the problems of the school community. Orchestras, glee clubs, and dramatic societies made up of students render programs to real audiences. Pupils learn health education through healthful living; they become acquainted with hygienic living quarters through a study of the physical aspects of the school plant. Publications are issued which are actual mediums of communication. Parliamentary organizations are effected which must consider real problems if the organizations are to exist. Accounts of student funds are kept by students and audited by students. In these and in many more ways, students are trained for the future by learning to attend to their affairs here and now.

**Guiding principles in organizing extra-curricular activities.** The experiences gained in administering student affairs in many schools have yielded a number of valuable

<sup>1</sup> Briggs, T. H. *The Junior High School* (1920), p. 157.

principles, many of which are summarized in the quotation below. The list was originally intended for junior high-school practice, but it is usable in the senior or in the four-year high school. The reader will understand that the length of time certain customs have been in existence and their efficiency, together with the type of pupils found in a school, may make advisable certain changes.

Whenever possible a definite time allotment in the regular program should be provided. A definite time allotment will result in a much better spirit of coöperation on the part of the pupils, and many will participate who otherwise would not. . . .

Each organization should be sponsored by a member or committee of the faculty, who shall be appointed by the principal. . . .

All meetings of organizations should be attended by one or more sponsors. . . .

Pupils desiring to form an organization should secure the approval of the principal. . . .

The school policy should guarantee absolute democracy as to the admission and requirements for all organizations. . . .

Membership should be determined by the work and purpose of the organization in accordance with the rules drafted by the members and approved by the principal. . . .

Pupils severing their connection with the school should cease to be members of the organizations. . . .

All meetings should be held in the school buildings unless permission is given by the principal to meet elsewhere. . . .

Rules governing eligibility for office-holding in organizations should be in accord with the school policy. . . .

The school should limit the number of organizations to which a pupil may belong, keeping in mind the proper balance between the curricular and extra-curricular activities. . . .

All money handled by organizations should be properly checked up either by sponsors making reports to the principal or by a centralized auditing and accounting committee. . . .

The school should provide for a student government organization to which should be delegated as much responsibility, with a corresponding amount of authority, as it is capable of carrying for the welfare of the community. . . .



The school should provide class organizations, honor organizations, and systems of awarding honors; all other organizations should be the outgrowth of the pupils' initiative.<sup>2</sup>

**The home-room organization.** Under the home-room organization, the student body is divided into homogeneous groups of approximately thirty, each of which is assigned to one teacher for a period of ten to thirty minutes daily. While great variation is shown in details of organization, there is nevertheless sufficient agreement about the plan in general to permit a sketch of its main characteristics.

*Organization.* In the first place, pupils may be assigned to home rooms in accordance with their class membership. This procedure has much to commend it. Among other things, it makes the group more homogeneous in interests, and makes it possible for the teachers to carry out guidance policies more easily than would be the case were the groups more variable in age and academic achievement. It also makes it possible to assign a group to the same teacher for more than one year. Some prefer to separate boys and girls. Such separation, however, is not always possible or preferred.

Little tendency is shown to place pupils in home rooms in accordance with ability ratings. There is, moreover, good reason for consciously avoiding such a method of placement. It is unnecessary to the purposes of the home-room organization; it will be likely to have a derogatory influence on a democratic school spirit. While much depends upon the type of activities and the way in which they are carried on, a random selection of pupils for each of the several home rooms should be something of an antidote to the feelings of inferiority or superiority which sometimes prevail when class sections are formed upon an ability basis.

*The home room and administrative routine.* Almost invari-

<sup>2</sup> Reported by Briggs, T. H. *Educ. Ad. and Super.* (1922), 8: 1-9.

ably one of the duties of the home-room teacher is to keep attendance records. This duty is sometimes augmented by assigning the teacher power of granting or withholding excuses for absence or tardiness. If the pupil has been guilty of misbehavior, the home-room teacher may be the one who first investigates the matter. Finally, such administrative details as making announcements, selling tickets, planning thrift campaigns, and the like, occur through home rooms.

*The guidance function of the home-room teacher.* For the rank and file of pupils the administration of the secondary school is quite impersonal. Granted that classroom instruction gets down to a personal basis (and such is not always the case), the need for personal guidance still remains. The most important function of the home-room teacher is to exercise this guidance. He must be able to help pupils in selecting studies, he must know how to stimulate the laggard to greater effort, and he must be successful in his efforts to cultivate the right attitude toward school work. More than this, he must be able to give sound advice in matters of conduct, to develop initiative, and to inspire. To this end he must be the true friend and counselor of each of his home-room pupils. He will need to know about each pupil's home conditions, state of health, ability as a student, play, work and study habits.

*Group activities.* The best home-room organization does not stop with matters of administrative detail or even with the guidance function. To these are added activities of interest and concern to the group. A parliamentary organization may be effected, and the pupils given responsibility for all matters, including administrative, that they are willing and able to assume. Home rooms often compete with each other in scholarship, in the appearance of their rooms, in thrift campaigns, etc. Again, programs very similar to

those conducted in the school clubs may be planned, depending upon the time available and upon the nature of other extra-curricular activities.

**The assembly.** The assembly is the place for building school morale, and for the development of a sense of unity (which is a part of morale) among the diverse interests of the school. Here matters of concern to the entire school are considered, here pupils and teachers learn of the work and activities of the various divisions of the school, and here pupils participate in the affairs of the school community. By expressing their opinions upon matters of common interest and by taking part in assembly exercises, pupils learn the value of coöperative effort and action. The assembly is thus a socializing agency. It also supplies a natural method of learning, for all of us learn from each other. Participation in assembly exercises also stimulates and gives practice in good oral expression.

To be successful, the assembly must be interesting, instructive, and inspiring, not from the teacher's point of view, but from that of the pupil. It is so easy to give pupils something which ought to interest, instruct, or inspire, that many of our exercises have been without the effect they should have had.

*Matters to be minimized or avoided.* Too much dependence upon the assembly as a means of acquainting pupils with school affairs through announcements should not be made. Announcements can better be made on bulletin boards, in the school paper, and through other agencies. Time which can and should be given to the real purposes of the assembly is thus saved, and relief gained from the tediousness which is likely to accompany the process of making announcements. Similarly abatement of interest and lowered school morale caused by over-emphasis upon disciplinary matters have led some to the belief that the assembly should not be used for

disciplinary purposes, nor to point out faults and shortcomings. The thing aimed at is likely not to be accomplished, for as a rule conduct is not improved through condemnatory methods. If, however, the right relations have been established between principal and pupils, it seems that it should at times be possible for the principal to use the assembly for "heart-to-heart" talks regarding some misconduct on the part of the students, or some needed change in the management of school activities. In such instances, as Cubberley<sup>3</sup> points out, he must be "very clear in his own mind as to what he wants to accomplish and the means he must use, and he must be very concrete and talk in terms the pupils will understand. By making practical application to the needs of the moment he can, if he uses tact and skill, develop loyalty, ideals, appreciation, patriotism, and other virtues of a well-managed school. By occasional intimate talks on matters of school control, the general attitude and discipline of a school can be materially improved, and the school property protected instead of destroyed."

*Types of assembly programs.* One of the commonest and one of the easiest methods of filling the assembly period is to extend an invitation to an outside speaker, musician, or entertainer. In favor of this procedure it may be said that the visitor is likely to be interesting; against it may be urged the point that pupils are kept from participating. Certainly it can, and in many places is, employed too frequently. Visits from persons outside the school are most profitable when the subject-matter is in some way connected with the work going on in the school, or when the topic is of immediate value in giving new direction to some phase of school life.<sup>4</sup>

<sup>3</sup> Cubberley, E. P. *The Principal and His School* (1923), pp. 323-34.

<sup>4</sup> *Some Uses of School Assemblies.* Publication of the Lincoln School (1922), p. 19.

Extra-curricular activities, each of which engages a group of pupils as contrasted with the entire student body, should be represented. Included here are club activities, chorus and orchestra work, dramatics, literary exercises, and the like. That the opportunity of appearing before the assembly is a strong source of motivation to those pupils engaging in one or more of these activities is apparent. Demonstrations from gymnasium classes or home economics work, experiments from science, or a talk on some foreign country or a historical character, are examples of exercises which can be drawn from the work of the regular classes. Participants are greatly motivated, for their performance must interest as well as instruct; listeners not only gain valuable information, but learn about the various lines of school work. The total effect is not without influence upon teachers.

National holidays and special days or weeks, such as arbor day or education week, offer opportunities for special assemblies. Some schools have developed traditions which call for special assemblies at certain times each year.

Much use has been made everywhere of assemblies for arousing loyalty to athletic teams and for increasing attendance at athletic contests. Similarly, assemblies have been used to interest pupils in debates, the school paper, and in other extra-curricular activities. However, there are other matters which can well claim the attention of the entire group of students, such as scholarship, methods of passing from class to class, cleanliness and orderliness of building and grounds, and certain activities from the regular classes.

The following are examples of assembly exercises selected at random from a number of high schools: A practical demonstration of boy scout work by the scouts; presentation of a Latin play; a radio program; one-act plays and readings

presented by a dramatic club; a Lincoln program; demonstration of the importance of a clean water supply; a brief talk by the mayor, in which he explained his duties; demonstration by a general science class; recital by the school orchestra.

*Arrangement of program.* As yet many principals either arrange their own programs or assign this duty to teachers. Some act as chairmen of faculty committees which perform this function; others have an arrangement whereby pupils are represented upon the program committees. Unquestionably, the last method is the one which should eventually be adopted.

Great variation is shown in the length of the assembly period and the number of assemblies per week. Some have assemblies as short as ten or twenty minutes, and as frequently as five times a week. The general inclination seems to be in favor of a longer assembly period, with meetings held less frequently.<sup>5</sup>

*School clubs.* School clubs are encouraged to provide means for small groups of pupils to follow some definite interest, or to develop interests for pupils whose horizon is restricted. A club usually has a parliamentary organization, a limited membership, and a faculty sponsor. Every club should be open to every pupil on the same basis, and every pupil should be urged to belong to a club. Any legitimate activity, whether or not it is directly related to curricular affairs, in which a sufficient number of pupils are interested and for which a qualified sponsor can be found, may well be represented in a club.

Clubs in almost endless number and variety have been formed. The following list is representative of those commonly found in secondary schools:

<sup>5</sup> Evans, E. E. *Sch. Rev.* (1923), 31:282-86.



Art needle work	First aid	Postage stamp
Astronomers	French	Poster
Bird	Hiking	Public speaking
Blue print	History	Radio
Camera	Inventors	Short story
Camp cookery	Latin	Spanish
Chess	Mathematics	Social etiquette
Dramatic	Millinery	Science
Drawing	Music appreciation	Travel
Debating	Mythology	Wild flower

*Club organization illustrated.* The following paragraphs show the organization and activities of the Travel Club of the Holmes Junior High School, Philadelphia: <sup>6</sup>

*Aim:* To broaden the interests and sympathies of young people by acquainting them with the beauties and wonders both of our own and other countries.

To arouse a wholesome curiosity in children to know something beyond their own small world. To lead them to read books of travel and attend travel talks, and to create in them an impulse to travel when opportunity comes.

*Activities:* Imaginary visits to sections of our own country and to foreign countries. Classes select country to be visited. Talks by sponsor illustrated by slides and films. Picturesque and historic values emphasized.

Programs made up of stories, games, songs, and folk dances characteristic of the various countries visited are presented by the classes who selected those countries for consideration.

Talks given by outside speakers who tell of trips they have taken to interesting places. The fact that these are recountals of personal experiences has a tendency to make the impression more vivid.

Reading hours devoted to books of travel and magazine articles.

Making of scrapbooks by club members from newspaper and magazine clippings and pictures illustrative of talks taken up at club meetings.

*Membership:* Open to all.

<sup>6</sup> From Thomas-Tindal, E. V., and Myers, J. D. *Junior High-School Life* (1924), pp. 224-25. Reprinted by permission of The Macmillan Company, publishers.

. It is primarily with the sponsor that the success or failure of the club rests. He needs to have a real interest in the activity of the club, sufficient ingenuity to formulate and carry out a program, and the confidence of the members of the club. His leadership must be real. On the other hand, he cannot dictate policies: all the activities must be spontaneous, or the club loses its value. Hence the sponsor must be a person whose advice is sought spontaneously. When his advice is sought he must always be ready with helpful suggestions.

*The high-school fraternity.* The club represents one of the forms of extra-curricular activity which, it is hoped, will provide a substitute for the high-school fraternity — the most frequently met type of exclusive social organization found in secondary schools. Exclusive clubs and cliques in general and fraternities and sororities in particular are usually regarded with disfavor, and in several States are prohibited by law. In many places they still flourish, sometimes in *sub rosa* fashion. Various investigations have shown that, in general, members of high-school fraternities and sororities have lower scholarship, more absences, and furnish more disciplinary problems than non-members. Moreover, the fraternity is accused of creating snobbishness among its members. Worthy students fail to become members because they lack social position, or dress poorly. In many schools the fraternity has become a political organization to boost its own members for school offices, regardless of their fitness; in other schools, a fraternity has often dominated athletics.

The foregoing is only a brief summary of the many evils alleged to accompany high-school fraternities. Seemingly, it should be a simple matter to abolish them; in reality, it is a difficult task. In the first place, many have been in existence a number of years and have as former members

prominent citizens of the community who look with disfavor upon any movement against the fraternities. In the second place, fraternities are the result of social and other characteristics of adolescent nature. Most of them have developed without guidance. If they are abolished and if no provision is made for a substitute the problem is not solved, for the way is open for other organizations, which may prove just as objectionable, to spring up. Even in States where fraternities are prohibited by law, the problem cannot be considered as solved until a really constructive program for organizing social activities has been worked out.

**Student publications.** One of the most effective means of stimulating school pride and loyalty and of unifying the purpose and sentiments of the school is found in student publications. The contents of the school paper, the students' handbook, or the class annual are of intense interest. Most of this interest comes from the fact that the items or stories are of general concern; not a little from the coöperative nature of the enterprise. Practically every student and many teachers read the student publications. Indeed, the circle of readers is quite likely to widen to include not a few parents. Patrons are naturally interested in what goes on in school, hence the publications will do much toward keeping them informed concerning school affairs and interested in the welfare of the school.

Besides being a coöperative activity and hence valuable in training in group activity, a school publication offers an opportunity for training in business principles and in written expression. The boy or girl who learns to estimate the cost of an issue of the school paper, who can conduct a campaign for subscriptions, or who can handle advertising, has gained training which should prove valuable in the future.

From the standpoint of the curriculum, perhaps the chief value of a student publication lies in the opportunity offered

for training in written English. Something that other people want to read is the first essential of a newspaper story. Expression must be clear and concise. Correct spelling, capitalization, punctuation, and sentence and paragraph structure are essential, as the young writer who examines his first "story" after it has been proof-read is likely to learn. It is unnecessary to do more than mention the fact that the average pupil is greatly stimulated by the thought that he may write something which will appear in print.

*Publications suitable to the secondary school.* The paper, the class annual or yearbook, the students' handbook, and circulars or leaflets of information are the publications most commonly found. As with many other problems, the size of the school, financial condition of the community, and the presence or absence of a member of the faculty competent to direct one or more of these enterprises, are factors in determining what should be attempted. The school paper raises the most difficulties. Larger schools experience little trouble in financing and editing a paper. In smaller schools it is often best, especially for the first year, to make arrangements with the local paper for a few columns of space each week. This is often furnished free of charge.

Practically the same problems found in connection with publishing a paper are also found in producing an annual. The organization of the editorial and business staffs is practically the same, but the work of publishing is usually further removed from the student body, and fewer pupils are benefited. The interest that attaches to the frequent appearance of the paper is likely to be considerably greater than that aroused by the annual. If it is possible to publish a paper or an annual, but not both, it is usually wise to decide in favor of the former.

The value of the handbook in giving information and guidance to new pupils has already been remarked in a previous

chapter. Its educational influence upon those who contribute to its make-up is not dissimilar in many respects to that exerted through the school paper or annual. But the typical handbook usually gives an account of the physical equipment of the school plant, sketches the lines of training open to pupils, describes the form and organization of extra-curricular activities, and contains statements of what the school stands for. Pupils who assist in formulating statements of these matters gain a real understanding of the purposes and methods of school life difficult to gain elsewhere. Such descriptions, worked out by pupils and for pupils, are bound to exert an influence often lacking in the formal statements contained in the typical manual. Boards of education will probably assist in financing the handbook, since they can divert to this purpose the funds formerly used in publishing a manual.

*Faculty control.* There is general agreement that the management of school publications should be lodged in the division of English. In this department a teacher is most likely to be found who has had special training in the field of journalism. English teachers are, moreover, responsible for such training as the school gives in written expression. Often news-writing is made a part of the English courses.

Pupils should be encouraged to contribute articles of current information of interest to the school. Even adverse criticisms, if frank, honest, and not too severe, may occasionally be permitted. To guard against mistakes here and elsewhere, no edition should go to press until it has been scrutinized by the faculty adviser or his representative. Local editors do not hold themselves responsible for anything said in the paper, nor are they bound to correct errors of any sort in the copy handed to them.

*Organization of the staff.* Problems connected with any student publication naturally fall into two divisions: selec-

tion of students for responsible positions, and editing and financing the publication.

There can be no question that pupils should have a voice in selecting from their number those who are to fill responsible positions. The success of the enterprise depends so much upon the ability and leadership of those elected, however, that the principal often feels it necessary to have a hand in the elections. Under one method, the business manager is appointed by the faculty adviser, and the editor is elected by the senior class with the provision that the candidates meet the approval of the faculty. The class offers from four to ten names for the post, and these are thinned down by the faculty adviser to two candidates, upon whom the class votes. Other members of the staff are selected in a similar manner, or by direct appointment.<sup>7</sup> Contrasted with this is the method of allowing the entire school to elect the editor-in-chief and the business manager by first casting a nominating ballot, then electing from the two or three receiving the highest number of votes. Here a faculty member may direct attention in an unofficial way to certain pupils who appear to have the qualities needed for the respective positions; the policy followed, however, is that pupils are usually the best judges of one another's ability.<sup>8</sup>

The editor-in-chief must have a number of assistants. Literary, class, athletic, club, assembly, and other interests are usually represented by reporters or sub-editors. Sometimes the editor appoints his assistants; sometimes these are elected by the interests they serve. Here as with the election of the chief editor and the business manager, such

<sup>7</sup> Thorpe, M. *The Modern High School*, edited by C. H. Johnston (1914), pp. 493-94.

<sup>8</sup> Pringle, R. W. *Adolescence and High-School Problems* (1922), pp. 268-76.



factors as previous customs, the length of time the publication has been issued, and the ability of the principal and faculty in guiding pupil activities, condition procedure. In general, pupils should be allowed as much responsibility in elections and appointments as possible.

Although in many schools a part of a general fund is diverted to school publications, it is upon the success of the business manager and his assistants in conducting the subscription campaign and in selling advertising that the fate of the publication depends. A subscription from every pupil cannot be secured, nor should an undue amount of coercion be permitted. However, an active business manager may lengthen his subscription list through the addition of names from the alumni and townspeople. Even though the number of subscriptions is as large as may reasonably be expected, dependence will have to be placed upon advertising to carry the paper along unless the school has its own print shop. Whether or not a school publication is a good advertising medium is a question upon which there is no agreement. It is certain that a large sum of money is raised through advertising,<sup>9</sup> and it seems reasonable to believe that student publications must be considered a good advertising medium.

**Student funds and finances.** Funds are necessary for carrying on various extra-curricular activities. Indeed, in the modern secondary school so many calls for expenditures are made as to cause no little concern to administrative officers. Parents who are perhaps at some sacrifice to keep their children in school can ill afford extra expenses. Nor is the difficulty entirely one of raising money for this or that purpose. Young people should learn economy and how to spend money wisely. It is always best for a school to adopt a policy of reducing to a minimum the amount to be solicited

<sup>9</sup> Cf. Nixon, O. F. *Sch. Rev.* (1923), 31:204-12.

from students. Likewise it is best to prohibit tag days and drives which place the non-subscriber in an uncomfortable position.

Collections and disbursements of student funds should be properly supervised. In the first place, the opportunity for training in methods of handling accounts is too valuable to be lost; in the second, it is little less than criminal to throw temptation in the way of the pupil by entrusting him with funds of which no strict account is kept. The adolescent is at the age when desirable things are expressed in terms of money. Good clothes, dances, shows, parties, athletic goods, and confections exert a strong appeal, and all cost money. The average youth has but limited sums at his command, and his character is not yet stable. Add to this the fact that he has little idea of how accounts should be kept, put him in a place where it would be convenient to borrow, let him catch the idea that no one should be blamed for "honest graft," and the total situation may be more than he can withstand.

The most successful system of supervision includes the customary student treasurers for the various organizations, and a general high-school treasurer or financial manager. The latter is often a member of the faculty. He is the one to whom all organization treasurers are accountable, through him they make all bank deposits. The financial manager usually signs all checks to pay bills, upon direction through an order blank signed by the treasurer and faculty adviser of the separate activity. He keeps an account of receipts and disbursements for each organization. To the student treasurers he issues standard receipt books, with numbered leaves. A record of each receipt is kept on the stub or on a duplicate made by a carbon sheet. All students are cautioned to make no payment without receiving a standard receipt from the treasurer concerned. This enables the treasurer to keep his

accounts in order; it is also evidence that the particular student has paid. Disbursements are made by the voucher check system. For each fund there are thus two records — one kept by the student treasurer, the other by the financial manager or under his direction. All accounts are audited from time to time.

**Athletics.** Perhaps nothing connected with the secondary school so universally engages the interest and catches the attention of young people as athletic contests. At a rally boys and girls sing songs, give school yells, form parades, wear school caps, and carry school banners with an enthusiasm that is a real delight. There can be no doubt that all are of the same mind and of the same spirit toward the thing uppermost in the minds of all — winning the game. The glory of the school is at stake, and all must fight — the team actually, the spectators by proxy — not only to keep that glory undimmed but to make it more resplendent. Since athletic contests attract so many, engage the interest so deeply, and stir the emotions so profoundly, it is little wonder that they are held in high regard as a means of developing school spirit and loyalty.

The intensity of interest is at the same time a source of danger and an advantage. In connection with the discussion of the moral values of athletics in Chapter XVII, it was pointed out that the chief dangers come from a disproportionate emphasis of interscholastic athletics and from the possibility of developing wrong ideals. When teams are organized in four or more major sports, with each team playing a long schedule, it is altogether likely that too much time and energy are consumed in attending contests. When too much stress is placed upon winning, improper ideals are cultivated, and but little cultivation is needed here to produce a rank growth. We need to clarify our notions and improve our practices in sportsmanship. We need also to

differentiate and to teach pupils to differentiate between true and misplaced loyalty. Much twaddle is given dignity by being hitched up with loyalty.

The point of view was taken in Chapter XIX that a system of intra-mural athletics is necessary in a program of health education. It remains here to point out that the benefits gained by the few through their membership in athletic teams should be extended to the rank and file. There is, perhaps, no better way of teaching initiative, co-operation, self-sacrifice, and loyalty than through team games, although it is a mistake to assume that virtues so cultivated will transfer automatically to all other group activities.

When boys first began to occupy their minds with high-school contests, members of the teams themselves filled the places of captain, coach, and manager. They learned something from their efforts to hold a team together, to schedule games, to pay expenses, or to direct players in a contest. These functions have for the most part been taken over by coaches or by faculty members, so that now all that the boys have to do is to do as they are told. The function of the athletic association is to yield revenue through the sale of tickets to its members; it is scarcely allowed to have a voice in formulating policies. Without advice and guidance boys will make mistakes in management; perhaps they will never do as well as the coach or faculty member. Were they allowed to do what they could, however, they would gain something not now gained under a system which prescribes every move in detail.

**Student participation in school government.** If the home room, the school paper, student finance, the assembly, and other activities are administered after the methods outlined in the preceding paragraphs, pupils will to a considerable degree be self-governing. In order to coördinate various or-

ganizations and to take care of matters affecting the entire student body, a central committee is needed. This committee is often called the "student council." It represents all members of the school and heads all student organizations. In addition, it assumes responsibility for formulating general rules of conduct, and for punishing offenders. What the executive and legislative departments of a State or the mayor and council of a city are to the electors, the student council is to the students. As State or city governments are distinctively organized according to the nature of problems to be met, so must the general student organization be designed, if it is to be successful, in accordance with the peculiar problems of government arising in the school community.

It should be unnecessary to remark that full and final authority in affairs of government cannot be assumed by secondary students. Their powers are delegated to them by the administrative officers of the school. The principal should always retain the final word concerning the decisions or activities of the student council. He should, however, relinquish to the council those affairs of school control which students are willing and competent to assume. More than this, he should be able to guide the activities of the students in such a way that their powers of self direction will not diminish, but increase.

*Organization of student council.* In time, a standard form of organization for student councils may evolve; as yet, however, practices are many and varied. In some places the officers and representatives are elected from the entire student body; in others, officers get their places through general election while representatives are elected from certain groups of students. In small schools, the class often forms the unit; in large schools, the home room. In the latter case the representatives from the several home rooms

of each of the classes will need to elect a representative, otherwise the student council will be too large. Again, it is sometimes customary to give representation to the athletic association, the editorial staff of the school paper, and similar organizations. The principal reserves to himself or his representatives the power of approving or disapproving candidates. Whatever the practice in representation, the machinery of organization should be simple.

*Functions of the student council.* If the council is to head the various school organizations, it will have something to say about conducting school assemblies, it will coöperate in formulating the policy for the school publications, it will hold general elections, participate in chartering clubs and other organizations, coöperate in matters of discipline, etc. A somewhat inclusive list of activities follows:<sup>10</sup>

1. Suggested committee activities:

Order — handles traffic, maintains order in assemblies, study hall, cafeteria, etc.

Safety — guards students against their carelessness, inspects lockers, welcomes visitors, serves in fire drills

Lost and found — receives and records lost articles and returns to owners on identification

Book exchange — secondhand books bought and sold

Scholarship

Manners and conduct

Sanitation

Publicity — issues bulletins, handles school paper, collects news for daily press

Social welfare — welcomes new students, looks up absent students, holds school parties

Library committee — aids in collection of books over-due, discourages carelessness, imposes penalties, and collects fines

Finance committee

Assembly programs

2. Participation in chartering clubs

<sup>10</sup> Allen, C. F. *Outlines in Extra-Curricular Activities* (1924), pp. 40-41.



3. Coöperation in matters of discipline
4. Encouraging yells, songs, pledges, slogans, etc.
5. Initiating many other activities for the good of the school

If student participation in school government is to be worth while, secondary pupils must assume the responsibility of disciplining offenders. If self-government is extended to an honor system in examinations, pupils must report those of their own number guilty of improper practices. Whether or not it is an incorrect point of view, the fact remains that boys and girls refuse to be guilty of what they consider to be tattling. The solution of the problem — and it is by no means an easy one — consists of cultivating an attitude such that pupils regard the offense as against themselves rather than against teachers. If this feeling is non-existent, if the line is drawn between teachers and students, progress in cultivating such an attitude will be slow. A beginning might be made, for example, through the traffic squad. A boy in charge of a corridor, who takes his responsibility seriously, will have little hesitation in singling out an offender. On the whole, an experiment in self-government is likely to fail if boys and girls are suddenly asked to detect and punish offenders in their midst.

*How to begin student government.* A principal who wishes to encourage pupils to participate in school government but who is surrounded by teachers unsympathetic with the idea can accomplish little until he has induced the latter to make an open-minded investigation of the question. Until instructors understand and believe in such an organization, and until they have made suggestions for beginning it, it had better wait. Similarly, little can or should be done until pupils know something about student government and are desirous of trying it. Otherwise they may reject the proposal; or if they acquiesce, their efforts will be half-hearted and void of results. Time for discussions is well spent.

Enthusiasm and understanding may be increased by asking the student body to select representatives to visit and report on neighboring schools where student government is in successful operation.

Almost any school has its class organizations, its athletic association, its musical organizations, and perhaps dramatic and literary clubs. The best plan is to perfect the organizations already in existence, and to coördinate them at the proper time through a student council. New functions can be assumed and more complicated governing machinery added when there is need for so doing.

Student government organizations do not always accomplish the ends expected of them. Teachers should, therefore, be on the lookout for possible weaknesses. They should realize that the whole scheme may deteriorate into a scramble for offices and that young students may become petty politicians, that some pupils gain a sense of responsibility with difficulty, and that natural leaders are quite likely to be overworked. While it is a great advantage to have the organization definitely planned, it is after all the spirit of the pupils, not the form of organization, that counts most.

#### TOPICS FOR DISCUSSION AND INVESTIGATION

1. Should the principal have an absolute veto over the decisions of pupils?
2. Should sponsors be elected by pupils, or appointed by the principal?
3. Indicate by a diagram and attendant explanation the organization of extra-curricular activities in a school with which you are familiar.
4. Should a certain scholarship be demanded of pupil officers?
5. Should each organization have its own funds, or should all receipts go into a general fund? If the latter, a system of apportionment or budgeting will be necessary, so that each organization may receive its share.
6. Should school credit be granted for extra-curricular activities?
7. What is the function of a dean of girls?
8. Show in some detail the way in which an extra-curricular activity in

which you are especially interested may contribute towards one or more of the aims of secondary education.

9. Did the secondary school you attended have student government? Was it successful? Why or why not?
10. Contrast the scope and organization of extra-curricular activities in rural and urban secondary schools. (See Ferriss, E. N. *Bureau of Education Bulletin*, 1925, no. 10, pp. 39 ff.)

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## INDEX

- Academy, 12 ff.  
Acceleration, 228, 230, 245.  
Accrediting system, 87, 95.  
Achievement quotients, 288.  
Adaptation to local environment, 554.  
Addams, Jane, 489.  
Admission requirements, college, 6, 86 ff., 310, 422, 586; junior high school, 145; senior high school, 146.  
Adolescence, mental and physical characteristics of, 165 ff.; and mental hygiene, 545; psychology of, in junior high school reorganization, 44.  
Adult mental age, 182, 591.  
Agricultural courses, 566.  
Aims, educational, 325 ff.; and selection of subject-matter, 361; in mathematics, 392; in health education, 528; transfer of training, 359, 385.  
American Classical League, 356, 384.  
American Council on Education, 102.  
American Historical Association, 419.  
Apperception, 51, 166, 317.  
Appreciation, education for, 504; musical, 509.  
Architecture, 506.  
Arithmetic, 388 ff.  
Art, 499 ff.  
Articulation, of elementary and secondary education, 35; N.E.A. committee on, 88; of elementary and junior high school, 143; of elementary and senior high school, 144.  
Assembly, 623 ff.  
Athletics, and extra-curricular activities, 635; and moral training, 477, 493; and leisure, 520; and health education, 538.  
Attitudes, 339 ff., 426, 544, 563.  
Ayres, L. P., 556.  
Bad college risks, 289, 313.  
Bagley, W. C., 430.  
Baldwin, B. T., 171, 183.  
Ballou, F. W., 160.  
Bassett, B. B., 432.  
Beatley, B., 98.  
Binet, A., 298.  
Biography, and moral training, 490.  
Biological point of view, 167.  
Biology, 400; and health education, 541.  
Blood pressure, 175.  
Bobbitt, J. F., 335, 392, 609.  
Bolton, F. E., 187.  
Bones, growth of, 175.  
Bonner, H. R., 226.  
Book, W. F., 275.  
Bookkeeping. *See* Commercial education.  
Books, most popular, 514.  
Boston Latin School, 6, 25.  
Boy Scouts, 440, 462.  
Brain, growth of, 176.  
Briggs, T. H., 37, 384.  
Brigham, C. C., 212.  
Bright pupils, school work for, 302, 303.  
Budgeting, 451, 465.  
Butler, N. M., 337.  
Byrne, L., 60.  
Cajori, F., 392.  
Caldwell, O. W., 400.  
Calisthenics, 536.  
Camp Fire Girls, 462.  
Carnegie Foundation, 158, 159.  
Character traits, and success in industry, 560.  
Charters, W. W., 380.  
Chicago, University High School, 308.  
Choice, 472; of vocation, 215, 269, 291, 551.  
Chronological age, 201.  
Circulatory system, development of, 175.

- Cities, growth of, 416.  
 Citizenship, 329, 332; education for, 411 ff.  
 City university, 78.  
 Classical investigation, 356.  
 Classics, French return to, 113.  
 Clothing values, 448; courses, 457 ff., 464.  
 Clubs, 626.  
 Co-education, 19, 23, 187.  
 Collective opinion, method of, 366.  
 College Entrance Examination Board, 87, 92, 98, 207.  
 College, education in, 67 ff.; growth of, 71; statistics of attendance, 80 ff.; rate of attendance, 285; college preparatory curriculum, 607.  
 Columbia College, 100.  
 Colvin, S. S., 102, 203, 363.  
 Commercial education, 550 ff.  
 Commercial positions, 281.  
 Commission on the Reorganization of Secondary Education, 43, 136, 330, 434, 569, 611.  
 Commission of the Association of Collegiate Schools of Business, 436.  
 Committee method, 365.  
 Committee of Ten, 74, 134, 170, 347.  
 Committee on Physical Education in Secondary Schools, 546.  
 Community civics. *See* Social science.  
 Comparative education, 110 ff.  
 Composition, 383, 384. *See* Expression.  
 Comprehensive examination, for admission to college, 92.  
 Comprehensive high schools, 49.  
 Compulsory school attendance, 57, 148 ff.  
 Computation, fundamentals of, 388 ff.  
 Connecticut secondary schools, program for social science, 435.  
 Constant subjects, 585.  
 Consumption, education for, 397, 447 ff.  
 Continuation schools, 53, 157, 580.  
   *See also* Part-time schools.  
 Coöperative schools, 580.  
 Core curriculum, 413.  
 Corporation schools, 577.  
 Correlation of subject-matter, 543, 592 ff.  
 Council, of high-school principal, 594.  
 Counseling, personal, 256. *See also* Guidance.  
 Counts, G. S., 235.  
 Courses, in mathematics, 394; in science, 402; in social science, 433; in manual arts, 468; in home economics, 456; in applied science, 463; for moral training, 487; in art, 500; in physical education, 546; in agriculture, 566; in commerce, 567; in industrial arts, 572; for special students, 574; number of pupils enrolled, 605.  
 Crampton, C. W., 171.  
 Cubberley, E. P., 18, 624.  
 Cumulative record card, 256.  
 Current literature, 513.  
 Curriculum, general treatment of, 345 ff.; of the Latin grammar school, 5; of the academy, 17; of the English High School, 24; reorganization of, in elementary school, 35; in junior high school, 39; in agriculture, 564; in industrial arts, 564; in commerce, 567 ff.; special, 574, 607; college preparatory, 607; general, 608; pupils enrolled in, 606.  
 Curtis, F. D., 399.  
 Curve of probability, 199.  
 Dalton Plan, 308.  
 Dancing, 455, 537.  
 Davis, C. O., 482, 485.  
 Davis, J. B., 266.  
 Dearborn, W. F., 180.  
 Defects, physical, 524.  
 De Garmo, C., 337.  
 Design, 502, 503.  
 Dewey, J., 412, 494.  
 Dexter, E. G., 28.  
 Discipline, 479.  
 Divorce rate, 447.  
 Drama, 516.  
 Drawing, 386.  
 Dresser, H. W., 220.  
 Ductless glands, 190.  
 Dull pupils, and school work, 302.



- Economic status, and intelligence, 210; and stay in school, 234 ff., 248; and vocational decision, 271.
- Economics. *See* Social science.
- Economy of time, 73, 134, 152, 301.
- Educational guidance, 254 ff.
- Eight-four plan, 133, 147.
- Elective subjects, 587.
- Elective system, 75, 588.
- Elementary schools, colonial, 9; 32 ff.
- Elimination, 43, 225 ff.
- Eliot, C. W., 74, 135, 499.
- Emotions, adolescent, 189 ff.
- Empathy, 489.
- Endocrine glands, 190.
- England, education in, 110 ff.
- English, sixth grade accomplishment in, 33; and vocational guidance, 206; general treatment of, 316 ff. *See also* Expression, Literature.
- English Classical School, 23.
- English High School, 23, 25.
- Enjoyment, education for, 503.
- Entrance requirements, college, 86 ff. *See also* Admission.
- Environment, 218.
- Ethical character, 333. *See also* Moral training.
- Ettinger plan, 262.
- Evening schools, 53, 580.
- Exeter Academy, 17, 21.
- Expression, 364, 378 ff., 503.
- Extra-class agencies and guidance, 267.
- Extra-curricular activities, in small high schools, 150; and citizenship, 439; and moral training, 492; general treatment, 615 ff.
- Failure, and elimination, 241; causes of, 243.
- Family, inheritance, 218; solidarity, 446. *See* Parenthood, Home membership.
- Farnsworth, C. H., 507.
- Faults of secondary-school pupils, 484.
- Federal aid, 54. *See* Smith-Hughes Act.
- Finances, student, 633 ff.
- Financial support, of Latin grammar school, 7; of academy, 21; of secondary education, 154 ff.
- Finley, C. W., 400.
- First aid, 464.
- Fisher Act, 118, 126.
- Fisher, H. A. L., 128.
- Five-three-three plan, 148.
- Follow-up, 282.
- Food values, 448; courses in, 457, 464.
- Foreign language, general, 261; and improvement of English, 383 ff.; social values of, 438; vocational values of, 575.
- Forgetting, law of, 342.
- Four-year junior high school, 151.
- France, education in, 110 ff.
- Franklin, E. E., 245.
- Fraternalities, 628.
- Fretwell, E. K., 296.
- Frebel, 517.
- Fundamental processes, in junior high school, 40; 331; general treatment, 373 ff.
- Funds, student, 633 ff.
- Gaiser, P. F., 238.
- Galton, 205.
- Gambrill, B. L., 107.
- Games, in Latin grammar school, 11; in academy, 21. *See* Athletics.
- Gangs, 538.
- Gates, A. I., 205.
- General courses, 258 ff.; 263, 395; 542.
- General education, 609.
- General Education Board, 356; 384.
- General intelligence, development of, 180; description of, 201 ff.; and elimination, 245, 249; of continuation-school pupils, 246; and choice of vocation, 273 ff.; and quality of scholarship, 287 ff.; and choice of subjects, 291 ff.; and guidance, 292; and classification of pupils, 305.
- Generalization, 352.
- Geography, sixth-grade accomplishment in, 33. *See also* Social science.
- Germany, education in, 110 ff.
- Giles, F. M., 480.
- Girl scouts, 462.
- Go-to-high-school campaigns, 268.
- Grade organization, 146 ff.

- Grammar, errors in, 380 ff.  
 Grand Rapids plan, 226.  
 Graphic representation, 387.  
 Gray, W. S., 374.  
 Gregariousness, 188.  
 Grouping, homogeneous, 304 ff.  
 Growth, mental and physical, 165 ff., 535.  
 Guidance, 144, 254 ff., 552, 557, 622.  
*Gymnasium*, 121.  
 Gymnastics, 536.  
  
 Haecker, 14.  
 Half-time system, English, 118.  
 Hall, G. S., 168.  
 Handbook, student, 630.  
 Handwriting, 380.  
 Harris, W. T., 304.  
 Haskell, R. I., 385.  
 Health, sixth-grade accomplishments in, 33; and stay in school, 230; 327; 330; and family welfare, 451; 466; general treatment, 524 ff.  
 Henderson, E. N., 499.  
 Herbart, 166, 499.  
 High school, origin of, 23 ff.; purpose of senior, 47 ff.; statistics of, 55 ff.; growth of, 28.  
 Hill, C. M., 258.  
 History. *See* Social science.  
 Holley, C. E., 240.  
 Holmes Junior High School, 627.  
 Home conditions, and length of stay in school, 240.  
 Home economics, and health education, 542; courses in, 456 ff.  
 Home membership, training for, 187, 328, 331, 445 ff., 501.  
 Home repair, 466, 468.  
 Home room, 621 ff.; and articulation, 143.  
 Homogeneous grouping, 304 ff.  
 Hopkins, L. T., 247.  
 Hygiene, 529 ff., 541.  
  
 Ideals, 339 ff., 351, 475. *See also* Attitude.  
 Identical elements, 349 ff.  
 Immigration, 212, 414.  
 Indian children, 212.  
 Individual differences, 194 ff.; pro-  
 vision for in junior high school, 42; and adaptation of instruction, 301 ff.; and transfer of training, 354; in enjoyment, 504.  
 Industrial education, 550 ff.; hygiene of, 531; and intelligence, 552.  
 Industrial Revolution, 445, 550.  
 Inglis, A. J., 20, 526, 589.  
 Instinct, 185, 441.  
 Integration, social, 32, 41, 412 ff.  
 Intelligence quotient, 201.  
 Interest, 618.  
 Interests, at adolescence, 191; vocational, 215 ff.; in school work, 249; scientific, 397 ff.; in reading, 512 ff.; in motion pictures, 519.  
 Intermediate schools, German, 123.  
  
 James, W., 348.  
 Jessup, W. A., 390.  
 Job analysis, 365, 368.  
 Johns Hopkins University, 75.  
 Jordan, A. M., 514.  
 Judd, C. H., 352.  
 Junior business training, 567.  
 Junior college, 68 ff.  
 Junior high school, functions of, 36 ff.; rise of, 137; and college admission, 105; and elimination, 250; programs of study, 595 ff.; curricula, 607.  
  
 Kalamazoo case, 27.  
 Kansas City experiment, 152.  
 Koos, L. V., 38, 69, 72.  
  
 Labor Party, English, 126.  
 Laboratory method, 404.  
 Language, as a tool of thought, 407.  
*See* Expression, Foreign language.  
 Latin grammar school, 4 ff.  
 Law, of 1647, 12; of 1827, 26; permitting junior high schools, 141.  
 Leadership, 215.  
 Legal provision for the high school, 26; for junior high school, 141; for health education, 527.  
 Leisure, 329, 333; worthy use of, 498 ff.; and family welfare, 452.  
 Liberal arts college, 76.  
 Library, 240, 377.

- Life-career classes, 264.  
 Lincoln, E. A., 98.  
 Literature, 383 ff.; and moral training, 488; social values of, 438; and leisure, 510 ff.  
 Little mothers' classes, 453.  
 Location of subject-matter, 589.  
*Lycée*, 14.
- MacPhail, A. H., 101.  
 Magazines, most popular, 515.  
 Mann, H., 133.  
 Manners, 477.  
 Manual arts, 348, 468. *See also* Industrial arts.  
 Manufacturing, education for, 572.  
 Marketing, 564.  
 Marro, A., 480.  
 Mathematics, 388 ff.; composite, 260.  
 Mechanical aptitude, 213, 295.  
 Mechanical drawing, 387.  
 Mediterranean race, 212.  
 Memory, development of, 178; relation to physical development, 181.  
 Mental age, 184, 201; adult, 182, 591.  
 Mental capacities, development of, 179; relationship among, 204.  
 Mental growth, 177 ff.; irregularities in, 183.  
 Mental hygiene, 544.  
 Merit badge system, 441.  
 Method, and citizenship aim, 438. *See also* Project, Socialized recitation, Laboratory, Homogeneous grouping.  
 Migratory tendencies, 189.  
 Miller, G. R., 384.  
 Minneapolis program of studies, 599.  
 Misbehavior, during adolescence, 480.  
 Mobility of labor, 556.  
 Modern Language Association of America, 575.  
 Monroe, P., 18.  
 Moore, H. H., 420.  
 Moral qualities, differences in, 220. *See also* Character traits, Moral training.  
 Moral responsibility, development of, 478.  
 Moral training, 471 ff.
- Motion pictures, 517, 518.  
 Motivation, 166, 379.  
 Municipal secondary schools, English, 117.  
 Muscles, growth of, 175.  
 Music, 506 ff.  
 Musical ability, 295.
- National Committee on Mathematical Requirements, 366, 393.  
 National Committee for Teaching Citizenship, 420.  
 National Federation of Modern Language Teachers, 575.  
 National Union of Teachers, English, 126.  
 Nationality, and stay in school, 233, 248. *See also* Nordic, Mediterranean, Indian, Negro.  
 Negro children, comparative intelligence of, 211; and stay in school, 234.  
 Neurosis, 545.  
 New England College Entrance Certificate Board, 96.  
 New Plan, of admission to college, 92.  
 Newspaper-magazine method, 366, 399, 430.  
 Nichols, F. G., 567.  
 Nordic race, 212.  
 Normal schools, 77.  
 North Central Association of Colleges and Secondary Schools, 95, 105, 243, 420.
- Objectives, educational. *See* Aims.  
 O'Brien, F. P., 241.  
 Occupations. *See* Vocations.  
 Odell, C. W., 274.  
 Old Plan, of admission to college, 92.  
 Oral expression, 378 ff.  
 Over-age pupils, number of, 229; and elimination, 230 ff.; courses for, 459.  
 Overlapping of abilities, 196, 198.
- Painting, 506.  
 Paper, school. *See* Publications.  
 Parenthood, education for, 452. *See* Family.  
 Parents, amount of education and

- length of stay in school, 240; and vocational decision, 271.
- Parent-teacher associations, 467.
- Parish schools, 10.
- Parker, S. C., 424.
- Part-time schools, 52, 577.
- Personal hygiene, 529.
- Phillips academies, 17, 21.
- Phillips, F. M., 226.
- Physical growth, 174 ff.
- Physical traits, differences in, 213.
- Placement, 282.
- Plato, 517.
- Play, 537. *See* Games, Athletics, Dancing.
- Political platforms, analysis of, 431.
- Popular high school, German, 123.
- Primary schools, European, 111, 113.
- Problems of youth, 474.
- Proctor, W. M., 292.
- Production, 564.
- Programs, assembly, 624; of study, 595 ff.
- Project method, 338, 423, 566.
- Puberty, 171.
- Pubescence, 173.
- Public school system, grade organization, 146 ff.
- Public schools, English, 115.
- Publications, school, 629 ff.
- Questionnaire method, 169.
- Race, and general intelligence, 210; and stay in school, 233. *See also* Nordic, Mediterranean, Indian, Negro.
- Racial inheritance, 218.
- Range of ability, 195.
- Rapeer, L. W., 231.
- Reasoning, development of, 178.
- Reflective thinking, 405, 418.
- Reform of 1924, German, 111, 121, 125.
- Reliability, of mental tests, 297.
- Religion, 477, 482, 494.
- Remedial guidance, 257.
- Renaissance, 4.
- Reorganization of secondary education, problems in, 133 ff.
- Required subjects. *See* Constants.
- Respiratory system, development of, 175.
- Retardation, 228, 230, 245, 247.
- Rugg, H. O., 425, 428.
- Rural high schools, 238.
- Saltatory theory, 177.
- Sanitation, 465.
- Scholarship, and intelligence, 287 ff. *See* Admission to college.
- School accomplishment, differences in, 194.
- School government, pupil participation in, 636 ff.
- Science, general, 259; transfer values of, 355; general treatment, 396 ff.
- Sculpture, 506.
- Seashore music test, 295.
- Secondary school, character of pupils, 61; uniformity in organization, 62; increase in population, 64; financial aspects, 156 ff.
- Self, 475.
- Self-activity, 317, 618.
- Seligman, E. R. A., 160.
- Sex differences, in intelligence, 207; in vocational interests, 215; in moral qualities, 221; in length of stay in school, 232, 248.
- Sex instinct, 185; education, 477, 532 ff.
- Shelter values, 449.
- Shorthand. *See* Commercial education.
- Silent reading, 374.
- Single curriculum, 609; school, French, 127.
- Sisson, E. O., 473.
- Six-four-four plan, 148.
- Six-six plan, 151.
- Six-three-three plan, 147.
- Slaughter, J. W., 545.
- Small high school, 55, 149; and try-out courses, 264; program of studies for, 598.
- Smith-Hughes Act, 155, 579.
- Snedden, D., 50, 611.
- Social-economic status, and persistence in school, 209.
- Social hygiene, 530.
- Social intelligence, 214.

- Social organization, 411.  
 Social science, general, 260; present status, 419 ff.; courses in, 433 ff.; and moral training, 490; and health education, 542. *See also* Citizenship.  
 Social status and elimination, 234 ff.; and vocational decision, 271; and intelligence, 209.  
 Social tendencies, 188. *See also* Fraternities, Clubs.  
 Socialized recitation, 494.  
 Sociology. *See* Social science.  
 Speakers, and guidance, 267.  
 Special abilities, 270.  
 Special-type high schools, 49, 559.  
 Spelling, 380, 385.  
 Spencer, H., 327, 334, 498.  
 Stenquist Mechanical Aptitude Tests, 295.  
 Student council, 637.  
 Student life, in the Latin grammar school, 10; academy, 20.  
 Studies, and guidance, 256. *See also* Courses.  
 Subject-matter, selection and validation of, 365 ff.; location by grades, 589.  
 Subjects, transfer values of, 354 ff.; and logical classification, 336; vocational values of, 575.  
 Survey method, 367, 369, 573.  
 Symonds, P. M., 285.  
 Tawney, R. W., 126.  
 Teachers, comparative training, 129; and correlation of subject-matter, 595.  
 Teachers' colleges, 77.  
 Terman, L. M., 180, 222.  
 Tests, as an aid in guidance, 287; special, 294.  
 Textbook method, 427.  
 Thorndike, E. L., 61, 97, 221, 285, 349, 356, 391, 505.  
 Three R's, school of, 10.  
 Thurstone Vocational Guidance Tests, 295.  
 Trade schools, 580.  
 Transfer of training, 346 ff.  
 Trips, and guidance, 267.  
 Try-out courses, 262 ff.  
 Typewriting. *See* Commercial education.  
 Unit, Carnegie, 88.  
 Universities, growth of, 71.  
 University education, 72 ff.  
 Valet clubs, 466.  
 Validity, of mental tests, 298.  
 Variability, in mental and physical measurements, 176. *See also* Individual differences.  
 Variable subjects, 587.  
 Vital index, 535.  
 Vocabulary, 376, 384.  
 Vocation, success in determined by moral qualities, 220, 560; destination of pupils, 280, 284; and family welfare, 451; values in home economics, 458, 475; numbers engaged in, 553.  
 Vocational choice, and elimination, 245; general treatment, 269 ff.; 551.  
 Vocational education, 50, 158, 550 ff. *See also* Part-time, Continuation, Evening, Coöperative, Special-type, and Technical schools.  
 Vocational Education Law, 579.  
 Vocational guidance, 254 ff.  
 Voelker, P. F., 488.  
 Voice, mutation of, 174.  
 Volksschule, 11, 121.  
 Wile, I. S., 533.  
 Will, 473.  
 Wilson, G. M., 390.  
 Wilson, Woodrow, 105.  
 Winnetka plan, 308.  
 Wisconsin University High School, 308.  
 Wood, B. D., 99, 101.  
 Woodworth, R. S., 205, 213.  
 Writing school, 9.  
 Written expression, 378 ff.





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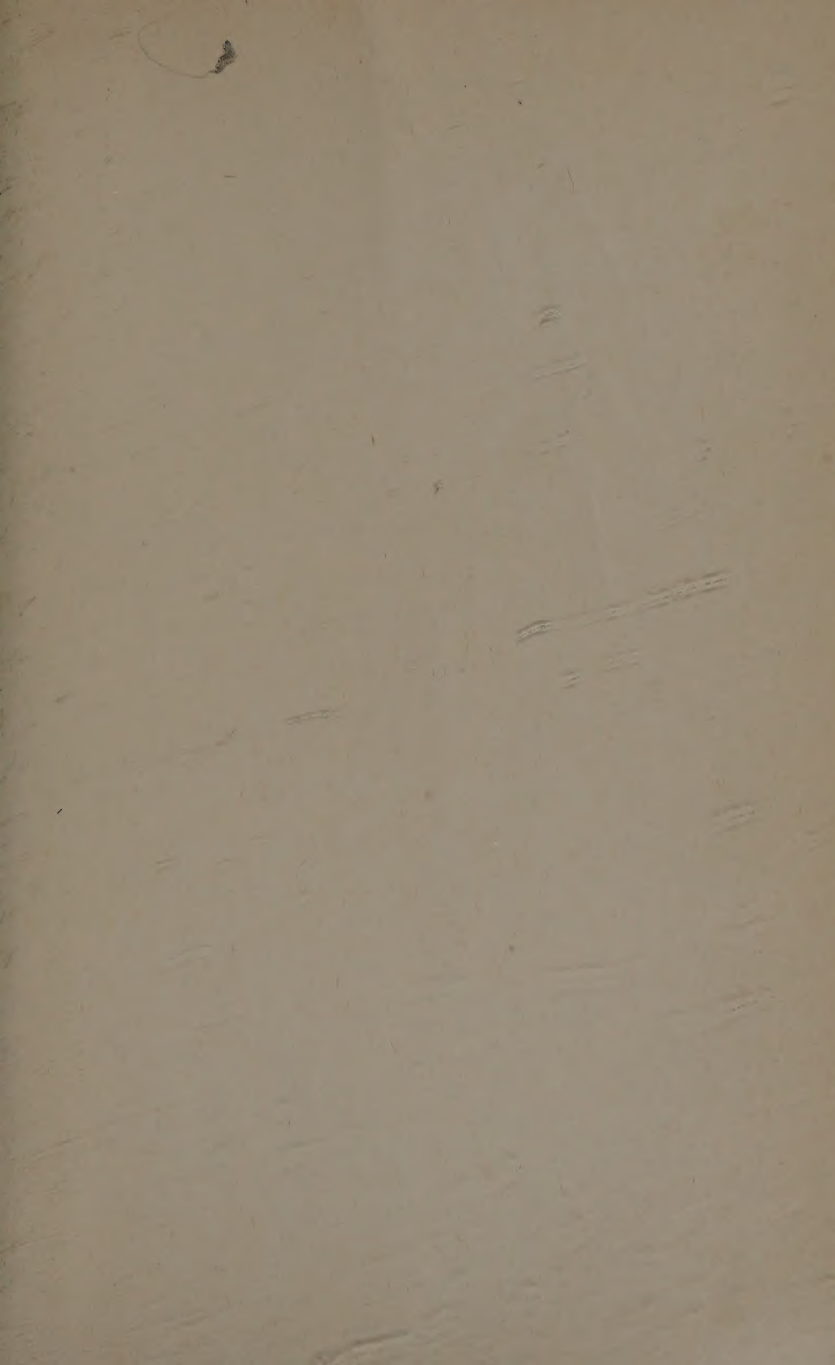
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